YOUR ESSENTIAL DIGITAL TV BUYERS GUIDE

SATELLITE & DIGITAL CHOICE

FREEVIEW TVS

Get Freeview and a TV all-in-one!

WIN! HUMAX FREEVIEW DIGITAL RECORDERS

SPEED DEMON

Mondeal Viaccess receiver scans like the wind

BATTLESTAR GALACTICA

Sexy cult sci-fi remake heads a thrilling season on Sky Digital

HARD DISC HEAVEN!

Topfield's satellite PVR is the ultimate digital system

GET THE DISH KNOWLEDGE!

Absolutely everything you need to know about satellite

HDTV HITS EUROPE

ON TEST

High definition TV is a reality! Europe's first HDTV receiver rated

FREE CHANNELS

The top 5 free-to-air receivers rated

ON TEST

PLASMA MEGA TEST

Awesome plasma screens for making the most of your digital viewing

MARCH/APRIL 2004 £3.99
01
9 771740 920002
HIGHBURY

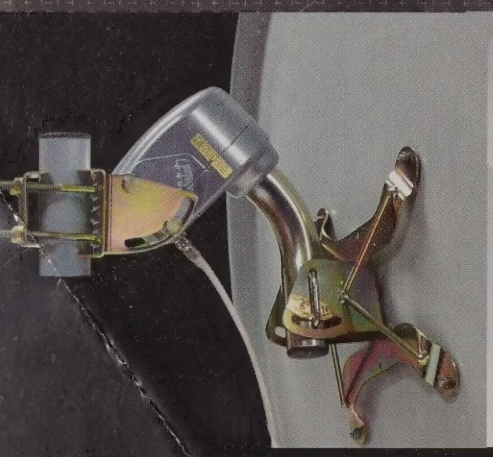
From south to east
From left to right
From turksat to hispasat
The @sat dish in combination with this motor gives you more gain and more channels.
This patented system is the new standard in motorized satellite reception.

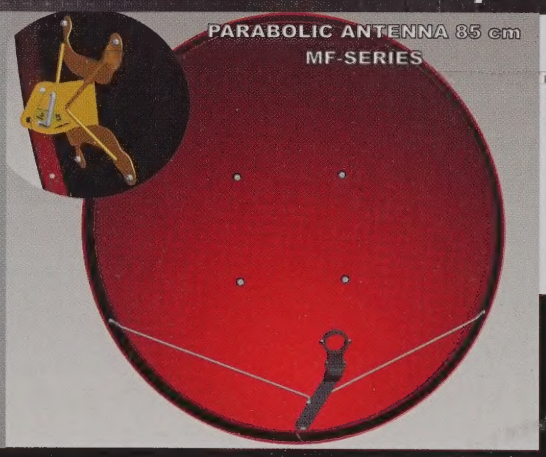
A revolution in motorized dishes

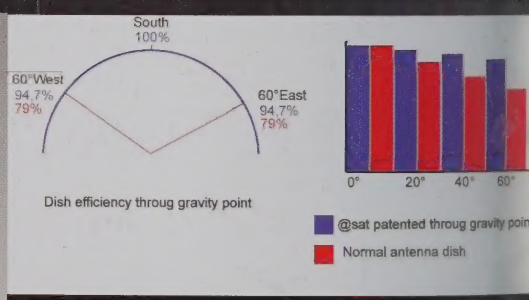
@sat

Our patented dishes deliver more true gain through there gravity point.

This new system for rotating the antenna through its gravity point is patented by the international patent office.







Unbeatable in price
Unbeatable in gain

@sat

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Approved @sat distributors:
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SATELLITE & DIGITAL CHOICE

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High hopes

Hello and welcome to the first bumper bi-monthly edition of *Satellite & Digital Choice*. If you're looking for the most informed coverage of the latest digital TV technology, you've most definitely come to the right place.

Speaking of which; just as the public at large is starting to get to grips with standard definition DVB broadcasts, high definition TV has made its debut on Astra 1 with the Euro 1080 service. If ever we needed an excuse to buy a plasma panel (especially as they're so incredibly cheap these days) this stunning pixel-perfect broadcasting standard is it. If you need even more convincing, see our feature on page 25. All we need now is for Sky to start broadcasting a premium pay-for-view HDTV service like its transatlantic counterparts. A Sky Sports HDTV channel would seem the ideal place to start, though it would require a new, or suitably modified Digibox to watch it. Ker-ching! Is that the sound of tills ringing at Isleworth towers we hear?

For the more lo-fi among you, there are still plenty of raw free-to-air newsfeeds and the like available on European satellite just waiting to be intercepted by the eagle-eyed dish jockey. If you want to get more from your satellite viewing experience than just TV channels, we've put together a massive six-page guide to the kit you need and what you can expect to find.

As you will have noticed this issue, we've expanded our coverage of satellite receivers to include even more in-depth reviews of the latest kit than any other magazine. We'll be implementing many more such changes over the next few issues so watch this space.

In the meantime, if there's some aspect of the satellite world you think we should be covering more of in *Satellite & Digital Choice* write to (or email) me at the usual address. Enjoy the issue. ■

G. Rennell

Grant Rennell – Editor

Technomate

Your Digital Partner for Life

What Satellite TV Awards 2003

Fastest Digital Satellite Receiver

"THE BUDGET SATELLITE CHAMPION IS BACK WITH AN UPGRADE TO ITS FREE-TO-AIR DIGITAL RECEIVER BUT ITS STILL JUST £99" ***Alex Lane,*** *'What Satellite' December 2003.*

Optical SPDIF 5.1 Digital SVHS – autonavigation link system. Diseqc moving motor satellite. Tracker display locking

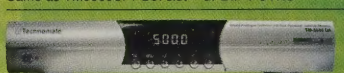
TM5500 D

Features

- 65 MB SDRAM MEMORY
- Dual axis incline & decline & E/W 2 positioner in DAPCI & CIP
- Digital-Analog 36Volt-4 wires and (diseqc 1 and 1.2), usals positiner DAPCI only
- DISEQC 1.2 and usals (for motorise)
- Less than 1 second channel change (1444 channels tuned in 2 mins. 40 Secs)
- 5000 channels programmable storage capacity
- 130 Satellites plus over 3500 channels pretuned in the memory
- Over 1000 transponders and 50 extra blank transponders
- Dual PCMCIA (Cam slots), DVB Common Interface (Viaccess 1&2, Irdeto 1&2, Aston Seca, Mediaguard 1&2, Nagra, Crytoworks, Betacrypt/Conax, etc CI-models only
- Automatically stores Digital/TV/Radio/Channels/PIDS
- Instant dish positioner adjustment in case of rain and poor signal
- 1000-to-45000 symbol rate SCPC & MCPC
- Super sensitive tuner for even the weakest signal on small dishes
- Instant teletext and subtitles supported by OSD and VBI
- Picture in graphic and freeze advance for PC printing via digital camcorder
- Unique colour control to enhance your picture quality
- Very fast and easy EPG function and various sorting in EPG
- Multi languages /real time display/ 3 Scart (CVBS/RGB)
- 8 favourite groups / multiple broadcast language support/
- Edit /channels/ satellite/name/ tranponders/ radio/skips/locks/delete/ add/etc
- Full default setting (factory reset) RF modulator (21-69)
- RS232(null modem) data&channel transfer to & from PC/ receiver
- Digital optical audio output- in TM5500D and CI Plus
- Full Auto navigation system-Auoto dish limit on Dapci &cip
- Drive 2 motors, 2 dishes and memorise up to 138 satellites per motor in DAPCI & CIP
- SVHS output TM5500D and CI+

2Ci £149

Same as TM5500Ci + 2Ci slot – SPDIF + SVHS

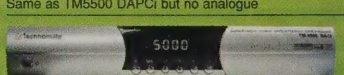


DA £159

Digital + Analog - Free-To-Air

CiP £189

Same as TM5500 DAPCi but no analogue



DACi £169

Digital + Analog - 2 Ci (card slot)

DAPCi £239

Digital + Analog - 2Ci/36v + Diseqc 1.2/Usual positioner

Back of TM5500 D

LNB input rated to 500mA for DiSEqC motors
Optical digital audio output with Dolby Digital support
TV Scart supports RGB and composite video
S-video mini-DIN output
Composite video phono output
Analogue stereo audio phono outputs
LNB loopthrough output to second receiver, activates in standby only
Serial port for software upgrades via a PC or swapping channel lists with another receiver
UHF loopthrough with modulated output
VCR Scart supports composite video only

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Bristol - Mardal Tech	01454 616 479
Eastern	0800 783 1845
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Warwickshire - Vision On 2000	01789 765 [illegible]

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Your guide to the 40+ channels you can get through your TV aerial

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The hottest new shows out on satellite and digital TV over the next two months

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Meet Michael Wood – the historian looking back over the last 1,000 years on UK History

Win a Humax Freeview PVR!

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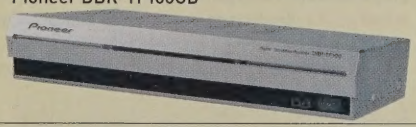
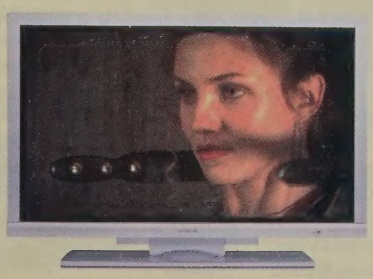
45 FREE SPIRITS
There are hundreds of free-to-air channels available, if you have the right equipment. SDC checks out some of the latest FTA receivers around
ON TEST: Triax DVB 260S, Technomate TM-5500D, Samsung DSR9400 and ID Digital F-20E

58 FREEVIEW WATCH
All you need to get over 40 digital TV and radio channels is an aerial and a suitable adapter. Here are three new ones for you to consider
ON TEST: Goodmans GDB 3, Pace DT-210F and Pioneer DBR-TF100GB



60 SURVIVAL OF THE FITTEST
Integrated TVs combine a TV with a Freeview receiver. Here are four handy space-savers
ON TEST: Panasonic TX-32DT30, Panasonic TX-32DT4, Sanyo CE28DFN2 and Sony KD-28DX50U

65 GLUED TO THE SCREEN
Plasma screens are the ultimate piece of TV kit. We get comfy with four deluxe big screen panel beaters
ON TEST: Pioneer PDP-43HDE, Panasonic TH-42PA20, Fujitsu P42VHA20ES and Hitachi 42PD3000E



Get into digital

WHETHER IT'S DIGITAL TV THROUGH A SATELLITE DISH OR AN AERIAL YOU WANT, SATELLITE & DIGITAL CHOICE OUTLINES THE OPTIONS OPEN TO YOU

'Digital TV' has rapidly become one of the buzz-phrases of 21st century entertainment. It offers better pictures and sound (not to mention more channels) than ever before. You effectively have three basic options now if you want to watch digital TV. You can either: a) install a satellite system, b) get a Freeview adapter, or c) subscribe to your local cable provider, which will install all the equipment you need.

If you're happy with having a dish on the side of your house, then installing a satellite system will potentially get you hundreds of channels. Many people (close to seven million and counting) plump for Sky Digital in this case. There are now dozens of free channels receivable with a Sky Digibox from Astra's satellites, and subscribing to Sky will yield you many more.

Don't feel you need a Sky system to get the best from satellite TV, however. There are hundreds of digital channels beaming down from satellites over Europe and a digital receiver will get you many of these free, including all of the BBC's digital channels (although only Sky Digiboxes can be used to watch Sky Digital). If you buy a receiver fitted with a scrambling unit (called a Conditional Access Module), you'll be able to watch pay-TV packages from other European countries with the right viewing card obtained from a satellite dealer.

The really adventurous should invest in a multi-satellite system. These come with a moveable dish that can point at numerous satellite positions in the skies and get analogue and digital channels from across Europe.

If a dish is out of the question, a Freeview adapter connected to your TV aerial will potentially get you a package of around 40 TV and radio channels and, best of all, there's no subscription to pay.

Here are eight ways to join the world of digital TV.

COST: £50 UPWARDS

SKY DIGIBOX

What is it? Lets you watch Sky Digital's TV and audio channels, plus interactive services from the Astra 2 satellites at 28.2°E and Eurobird at 28.5°E.

How many channels can it get? More than 180 from Sky, the BBC, Flextech and other UK broadcasters.

What you need with it: A 45cm dish or, if you live in south-west Ireland or North Scotland, a 60cm dish. Cost is included in the price above.

Cost to install: Just £50-70 if you subscribe to Sky. If you choose not to subscribe, Sky is obliged to supply the equipment free with a £120 installation charge.

Bad points: You have to pay to watch many stations, including ITV, Channel 4 and Five.

Good points: Easy to operate; no technical knowledge is needed.

COST: £99-£200

FREE-TO-AIR DIGITAL RECEIVER

What is it? Lets you watch unscrambled digital TV and radio channels from across Europe.

How many channels can it get? About 70 from Astra 1 at 19.2°E, or up to 1,000 if used with a moveable or dual-feed dish.

What you need with it: 60cm dish or, if you live in Scotland or Northern Ireland, an 80cm dish. Costs around £60-£80 with universal LNB.

Cost to install: About £50.

Bad points: Cannot receive Sky Digital or other pay-TV packages because it contains no decoding unit (called a conditional access module).

Good points: A cheap way to get lots of channels.

COST: £157-£400

DIGITAL PAY-TV RECEIVER

What is it? Lets you watch free European and pay-TV channels.

How many channels can it get? About 200 channels from Astra 1 and thousands if used with a moveable or multi-feed dish.

What you need with it: 80cm dish or, if you live in Scotland or Northern Ireland, a 1m dish. Viewing cards cost between £130 and £300. Conditional access modules (if required) cost about £100.

Cost to install: About £50.

Bad points: Can't watch Sky Digital.

Good points: Lots of European pay channels around.

COST: £99-£350

MULTI-SATELLITE DIGITAL RECEIVER

What is it? Comes with a moveable dish that points at lots of satellites, allowing you to receive just about any free digital satellite channels and raw news feeds.

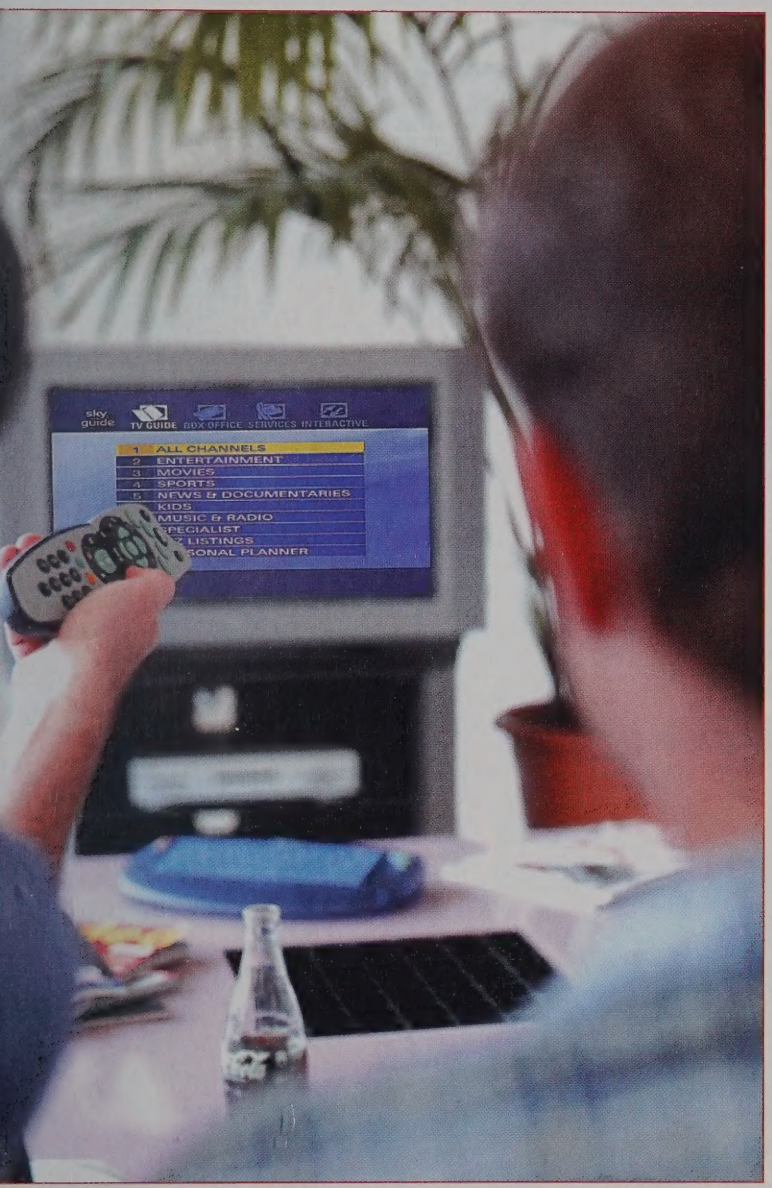
How many channels can it get? About 3,000 from broadcasters across Europe, Africa, and the Middle East.

What you need with it: A large dish with LNB. Typical prices are £90 (1m), £160 (1.2m), or £350 (1.8m). Also requires a positioner to move the dish, if it's not built into the receiver (costs from £80).

Cost to install: £100 to £200.

Bad points: Requires a large dish to be installed.

Good points: The ultimate satellite system. Lets you watch free channels from around the world, plus the UK channels (excluding Sky). Available in pay-TV and free-to-air versions.



COST: £249-£500

DUAL FORMAT ANALOGUE/DIGITAL RECEIVER

»What is it? Lets you watch analogue and digital channels without the hassle of buying two separate receivers.
»How many channels can it get? About 400 from Astra or 4,000 if used with a moveable dish.
»What you need with it: 60cm dish or, if you live in Scotland or Northern Ireland, an 80cm dish. Costs about £60-£80 with universal LNB.
»Cost to install: About £50.
»Bad points: Cannot receive Sky Digital or Sky's analogue channels because it contains no decoding unit (called a conditional access module) unless you buy a high-end priced system.
»Good points: Gets you the best of analogue and digital satellite TV.

COST: £60-£130

FREEVIEW ADAPTER

»What is it? A set-top box that allows you to receive digital terrestrial channels when connected to a TV aerial.
»How many channels can it get?
More than 30 TV channels and 20 radio channels.
»What you need with it: A TV aerial (not a set top aerial). Should be in good condition and preferably be roof-mounted.
»Cost to install: Those in weak signal areas may need a high-gain TV aerial which may cost upwards of £150 to install.
»Bad points: Currently only three-quarters of the UK is covered by digital terrestrial transmissions and there's no guarantee you'll be able to receive all channels.
»Good points: No subscription required.

COST: £199-£900

PVR

»What is it? A digital satellite or digital terrestrial receiver with a built-in hard disc drive. Allows digital quality recording without videotape and includes special trickplay features.
»How many channels can it get? Satellite PVR receivers can get anything between 200 and 4,000 channels. Freeview PVRs like the Pace Twin Digital TV recorder can get around 40 TV and radio channels.

»How much can it record? Around eight hours can be stored on a 10GB hard drive at broadcast quality. The average capacity is 40GB.
»Cost to install: £100 with an 80cm dish: up to £250 with a motorised 1m dish. Sky Plus requires a 45cm dish and twin LNB, costing £50.
»Bad points: Can be expensive. Sky Plus has a £10 a month subscription charge unless you subscribe to more than one of Sky's premium channels.
»Good points: Perfect recording quality, pause live TV, record programmes direct from the EPG. Some PVRs can store MP3 music files. Sky Plus is capable of recording two channels at once and can also store MP3 files.

COST: £400-£2,000

INTEGRATED DIGITAL TELEVISION

»What is it? A widescreen TV with an onboard digital terrestrial tuner for Freeview channels. Some (like the Panasonic DTS3) also feature an integrated Sky Digibox. Known as an IDTV for short.
»How many channels can it get?
More than 30 TV channels and 20 radio channels from Freeview. With an integrated Digibox, about 180 from Sky, the BBC and other UK broadcasters.

»What you need with it: Freeview requires a TV aerial. If it has Sky Digital, 45cm dish or, if you live in south-west Ireland, or northern Scotland a 60cm dish.
»Cost to install: With Sky Digibox, £50 and £70 if you subscribe to Sky, £120 if you don't.
»Bad points: An integrated Digibox restricts you to watching channels from the Astra 2 satellite position, many of which have to paid for.
»Good points: Easy to operate, one box fewer in the living room.

Spy Kids 2 on Sky Box Office, courtesy of BSkyB

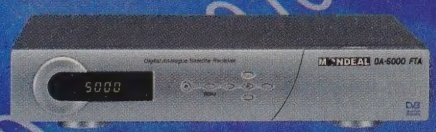
MONDEAL

www.mondeal-digital.co.uk

MONDEAL 2100CI Gold
4000 Channels 2 Cam Slots Easy to use menu DiSEqC 1.2 Motorised receiver

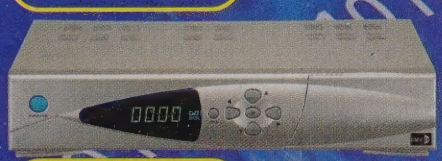
£139.00

MONDEAL AD-6000FTA
Digital+Analog Free to Air receiver DiSEqC1.2 BUILT IN POSITIONER



£159.00

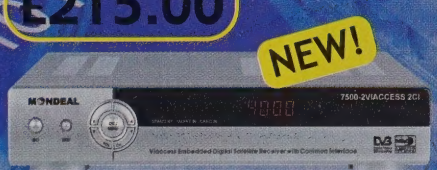
MONDEAL DAPCI-9900 EXPRESS
Digital+Analog+2CI+2Positioners DiSEqC1.2 & 36Volt 4 Wire



£215.00

MONDEAL 7500-2 VIACCESS 2CI (NEW) compact size 4000 channels 2Card readers 2 Cam slots High speed channels change and downloads DiSEqC 1.2Built in positioner Friendly Menu graphics

NEW!



£169.00

MONDEAL CXCI-9800 MAGIC
Top of the range receiver Built in Magic Cam 2CI 5000 Channels DiSEqC 1.2 POSITIONER

£225.00

MONDEAL 9000FTA (NEW)
Free to Air receiver 5000 Channels 2Scarts UHF Modulator DiSEqC 1.2 Motorised Dolby digital output

NEW!

INTRODUCTORY SPECIAL OFFER £79.00

MONDEAL 9200FTA Free to Air receiver 4000 Channels 2Scarts PnP Graphics Games embedded DiSEqC1.2 Motorised Dolby digital o/p

£95.00

MONDEAL DiSEqC MOTOR HH100

£75.00

MONDEAL DISHES All sizes available prices start from £19.00 with wall mount.

From **£19.00**

MONDEAL UNIVERSAL SINGLE LNB Premium quality 0.5db Noise figure best signal level.

£25.00

MONDEAL UNIVERSAL TWIN LNB Premium quality 0.5db Noise figure best signal level.

£45.00

MONDEAL UNIVERSAL MONOBLOCK LNB As above DiSEqC 1.2 For HOTBIRD & ASTRA

£35.00

Best prices available for wholesaler & Installers.

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UNIT 1, 40a WARTON ROAD, STRATFORD, LONDON, E15 2JU
Phone: 020 85551155 Fax: 020 85550886 Mobile: 07770388335

SATELLITE & DIGITAL CHOICE KEEPS YOU UP TO DATE WITH THE LATEST DEVELOPMENTS IN DIGITAL TV

CHRISTMAS BOOST TO FREEVIEW SALES

Freeview is now available in over half of households in the UK.

Over the Christmas holidays around 500,000 Freeview adapters were sold at around 100,000 a week.

There are now more than seven million sky subscribers, a million FTA satellite viewers and 2.2 million digital cable viewers.

This means that 12.7 million of Britains 24.9 million homes have access to more than the five terrestrial TV channels.

The BBC expects Freeview to be in three million homes by the middle of the year, and four million by 2005. The upcoming release of Freeview's first seven day EPG is expected to give sales a further boost.

Freeview personal video recorders will soon be developed, allowing users to record Freeview broadcasts to hard drives in PBVRs or recordable DVDs.

'The BBC expects Freeview to be in three million homes by the middle of the year.'

The guide will initially be available only to users of Fusion's Freeview adapters, but Humax and other major manufacturers are expected to sign up soon after. A full programme guide will mean

However, manufacturers that don't sign up to Fusion's EPG channel will have to wait 18 months for an open-source Freeview EPG is available, based on MHEG-5.

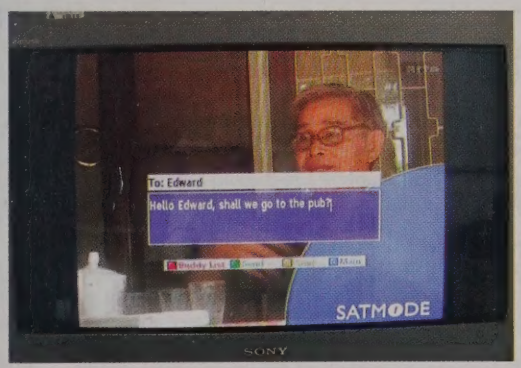
Two-way satellite test success

Two months after starting the project, Astra has been testing its two-way satellite service Satmode.

The Satmode project aims to make a two-way LNB and modem that can be integrated into satellite receivers, that will cost users less than £35.

The transmitter will use the high-frequency Ka-band with a bandwidth similar to that of a Ka-band modem, while the receiver uses a Ku-band LNB.

If successful, Satmode would mean interactive TV users would not need to use a phone line as there would be an always-on channel. Broadcasters and advertisers would also be able to tightly target regions or even specific users.



Satmode should be available by the end of 2004

A demonstration of the service at Astra's headquarters using a simple instant messaging program and the four coloured buttons on a remote control of a modified satellite receiver.

The system could be used to forward messages to mobile phones, upload pictures stored on PVRs to a central server, or for TV-based email.

Extensive field tests of Satmode began in February. The service is expected to be ready for broadcasters by the end of the year, although none have signed up yet.

Mobile Freeview

The first mobile TV/receiver for Freeview has been released by Technisat.

The Digipal LCD has a 6.8in LCD monitor and telescopic antenna, and supports the DVB now-and-next EPG.

The portable TV measures just 212x167x69mm and is able to automatically tune into channels when started (although UK users will have to retune when moving in areas covered by a different multiplex).

The built-in battery will last for two hours and the unit comes with a 12V adapter for use in cars, trucks or boats.

The Digipal LCD will be available for around £350.

Sat-Europe Direct (0845 130 3111), www.sateuropa.com

The Digipal is the first portable digital TV/receiver

NEWS SHORTS

STAYING PUT

Barb has revealed that most Freeview adapter owners mainly watch digital versions of the five main terrestrial channels. In November, Freeview users watched BBC, ITV, Channel 4 and Five 84.2 per cent of the time, compared with 58.8 per cent for satellite and cable users.

SKY NEWS FINED

Sky News was fined £50,000 for broadcasting a bogus news report during the 2003 Gulf war. The now defunct ITC imposed the fine over report by James Forlong which was purported to come from a deployed Royal Naval submarine, but was really filmed on a submarine in port. In an earlier inquiry the ITC found the 'report had not been presented with due accuracy'. Forlong, 44, an award-winning reporter who had worked for Sky News for 10 years, lost his job and committed suicide in October over the report.

COUNTING PVRS

Barb - the Broadcasters' Audience Research Board - is to start measuring the use of interactive TV services and personal video recorders (PVR). Currently viewers watching recording programmes are not figured in Barb's ratings. The organisation will have to develop new software to detect when its research panel is using the new technology.

TV DATING

Koopid, Sky's interactive TV dating service transmitted over 3.6 million messages from over 45,000 users in its first year. Koopid users can create a profile and send an electronic photo of themselves to be shown on the service. They can then be contacted by messaging using a remote control.

CHANNEL SCAN

ITV EXPANDS DIGITAL CHANNELS

ITV will be taking on the BBC and Channel 4's digital channels, by releasing three new digital channels.

In the Autumn the children's strand CiTV will be spun off into ITV Kids.

At the end of the year ITV3 will be available. This channel, featuring dramas and other highbrow shows, will be aimed at older viewers.

There is also likely to an ITV repeats channel, either showing the same shows with a completely new schedule (as Sky One Mix) or just delayed for an hour. The aim is to allow ITV2 to concentrate on popular spin-off shows like *Pop Idol Extra* and extended coverage of *I'm a Celebrity... Get Me Out Of Here!*.

HISPANIA ON HOT BIRD

Europe is getting a taste of Latin America from Hot Bird at 13°E, thanks to three Hispanic channels.

Cubavision, Venevision Continentale and Mundovision are all broadcasting free-to-air on 11.30GHz/H, SR 27500, FEC 3/4.

Cubavision brings news, education, sports coverage, drama, soaps, music, documentaries and travel information from Castro's Caribbean home.

Venevision Continentale brings news and current affairs from Latin America, as well as drama, sports, music, concerts and the ever-popular Latino variety shows.

Mundovision returns to Hot Bird, bringing a mix of soap operas, talk shows, music, documentaries, fashion, cookery, sports, spectacles and news.

PHOTOS ACROSS EUROPE

A Europe-wide picture-messaging service is now available on Hot Bird, by VIC-TV.

VIC-TV (Virtual Information Channels) enables account holders to upload an image and message on the internet, which is then broadcast across Europe for 15secs using Hot Bird.

To open an account and leave a message go to www.vic-tv.net

VIC-TV is broadcast on Hot Bird, 15°E, on 12.207GHz/H, SR 27500, FEC 3/4.

GOLDEN SPORTING OLDIES

ESPN – the American sports channel – is to launch the Classic Sport Channel on Sky Digital this year.

EPSN Classic Sport has been available for the past two years in Italy and France, showing legendary sporting moments from the country's favourite sports.

The UK version will concentrate of classic moments in football, rugby, cricket, athletics and tennis, run alongside major events in the sporting calander.

The channel will release EPG details and a launch date later this year.

KIDS GET MORE TV

A new worldwide children's TV channel is being launched by Fox Kids and ABC Cable Networks. The channel – Jetix – will bring the adventures of Power Rangers, X-Men, Spider-man and Inspector Gadget to children in countries as far apart as Israel and Brazil.

In Europe Fox Kids will start showing Jetix programming blocks from April. In the channels will be renamed Jetix.

JVC enters the LCD fray

JVC has joined the fast growing LCD TV market with four new flat panel screens.

The 17in LT-17C31 (£800), 23in LT-23C31, 26in LT-26C31 and the 32in LT-32C31 are 16:9 WXGA displays with resolutions of 1280x768. They can be wall-mounted using an optional bracket.

The TVs are fitted with picture enhancement technology, including JVC's DIST system, a digital comb filter and super digipure.

Each unit is fitted with an analogue TV tuner and have two built-in speakers which output a total of 20W RMS.

Connections include component video inputs and two RGB-capable Scarts. The LT-17C31 and LT-23C31 also have 15-pin PC inputs.

JVC, 020 8208 7654, www.jvc.co.uk

One of JVC's new high resolution LCD flatscreen TVs

Smile brings broadband from space

Smile is the latest satellite broadband service to be launched at 28°E.

Smile uses Eurobird's European beam to provide British homes with broadband internet access. The service can be picked up in most areas of the UK using a 60cm dish and can be combined with Sky Digital using a quad-output LNB.

The service offers download and browsing speeds from 512Kb/s with a 300MB priority download capacity for £21/month, to 2Mb/s with a 1.5GB capacity download at £71/month.

Installation costs £215 with a Technisat Skystar 2 PCI card or £315 with a Skystar USB external receiver.

Smile also offers special rates for its own ISDN internet connection and for hosting web pages and email addresses.

Sat-Europe Direct, 0845 130 3111, www.sateuropa.com

Definitely not a load of tosh

Toshiba have launched the latest salvo in the DVD recorder price war, with a new budget-priced entry-level model.

The DR-1 (approx. £300) supports recording and playback of DVD-R, DVD-RW and DVD-RAM discs, as well as playback of DVD, DVD-R/-RW/-RAM, CDs, CD-Rs and CD-RWs.

Also present is a timeshift feature to pause what is being watch during recording, or to watch it from the beginning and a thumbnail display of recordings on DVD-RAM discs. An editing function can combine different recordings into sections and create playlists.

The DR-1 has composite video in and out sockets, two RGB-capable Scarts, S-video output, and co-axial and optical digital audio outputs.

Toshiba, 08704 424 424, www.home-entertainment.toshiba.co.uk

The DR-1 is a powerful DVD recorder at a low price

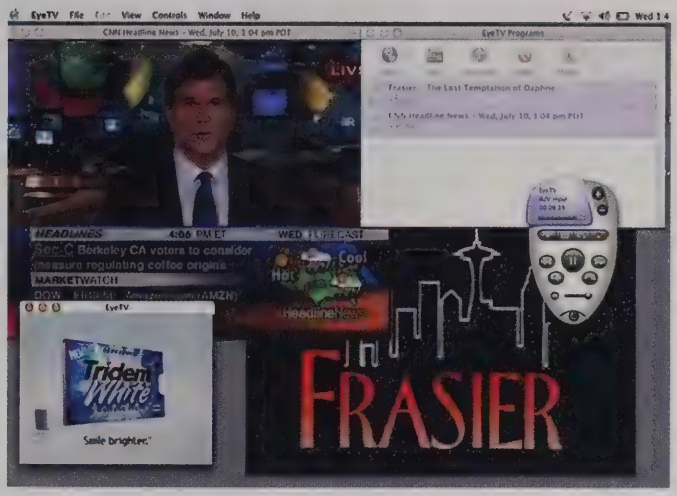
Macs have Eye on TV

Apple Mac users can now watch and record digital terrestrial broadcasts and free-to-air satellite TV, using new digital TV adapters from Eye TV.

The Eye TV 300 is an external free-to-air satellite tuner and the Eye TV 400 is a Freeview adapter. Both adapters use USB and Firewire connections and come with a remote control.

The devices are able to pause, rewind and fast forward programmes, and stored programming can be edited to remove adverts. Users can schedule new recordings using an online TV guide from TVTV.

Computers Unlimited, 020 8358 5855, www.unlimited.com
Elgato, www.elgato.com



Watch and record digital and FTA satellite TV on Apple Macs with Eye TV

Football back on terrestrial TV

Sky TV lost its exclusive right to broadcast Premiership matches, after coming to a deal with European regulators.

BBC, ITV and Five are set to bid for the rights to broadcast eight 'high quality' late Saturday afternoon matches held during the 2004-2006 seasons.

Sky agreed to the deal after the European Competition Commission said it was unhappy with last year's auction of the rights to broadcast three seasons of the Premiership.

The Premiership split the matches into Gold, Silver and two Bronze packages, in the hope that they would be split between Sky and free-to-air channels. However, the main broadcasters couldn't afford the top games and didn't have enough airtime between them to show the 58 games held each year contained in the Bronze packages.

Sky paid £1billion for all four packages, but now will demand to pay less as the deal is no longer exclusive.

The Premiership was concerned that it would be forced to re-auction the packages, throwing finances for football clubs into confusion mid-season.

Now the organisation will have to ensure that some high-quality games are exclusive to free-to-air broadcasters during the auction for the 2007-2009 seasons.

I see no dish

A range of see-through satellite dishes are to make it possible to have satellite TV, even in the strictest planning areas.

The 60cm and 85cm dishes from Metronic are made of a clear resin that surrounds a fine metal mesh. The only metal parts are the mounting pole, arm and LNB.

Metronic's clear resin dishes should keep the neighbours happy

Metronic claims the 60cm dish (priced around £99) is as good as the metal variety, while the 85cm dish (cost £129) is the equivalent of a standard 80cm dish. Both come with a 0.5dB LNB.

SMS, 01276 20916, www.smssat.bix
Eurosat, 020 8452 6699, www.eurosat.com
Solutions, 08456 444000, www.solutionsgroup-plc.com

Galileo bidders step forward

Five companies have stepped forward to build and operate Galileo – a European global positioning system.

SES Global, parent company of Astra, is working with Inmarsat and satellite builder EADS Space in one consortium, Eutelsat and Hispasat are in second, while Alcatel makes the third.

Unlike the American GPS system, Galileo will not be controlled by the military – so the system will not be downgraded during wars – and it will provide more accurate positioning.

If the winning consortium, European governments and other partners can find the £2billion required, 30 satellites will be placed in medium Earth orbit by 2008.

Three groups have stated interest in developing a European GPS system

NEWS SHORTS

MUCH MORE MOUSE

KILL BILL PART 2

TV FOR THE PISTE

WOLSEY MEDIA

CHEAP WEB TV

Phillips gets Flex-ible

Phillips has released a widescreen TV, with a built-in personal video recorder.

The 32in PW9768 Flex is fitted with a 40GB hard disc drive and twin analogue TV tuners, allowing one channel to be recorded while another is watched.

The Flex has three quality settings (HQ stores six hours at broadcast quality, SQ gives 11 hours at better-than-videotape, and LP for 28 hours of standard videotape quality recording). Recordings can be copied to tapes or recordable DVDs.

There is a pause live TV mode, that includes a 30sec commercial skip mode, which can cache three hours of programmes.

The PW9768 also features Phillip's detail-enhancing Pixel Plus technology.

Audio is provided through Dolby Pro-Logic and the set comes with six speakers to form a 5.1 speaker system and inputs for the surround speakers.

The TV is also fitted with four Scarts (two RGB-capable).

The PW9768 costs in the region of £1,700.

Phillips, 0870 900 9070, www.phillips.co.uk

The PW9768 Flex can store up to 28 hours of programming on its hard disc drive

Sky One set for 24

The third series of *24* will now be shown on Sky this spring, alongside two new original series from America.

Talks between the BBC and Fox (*24's* producer and sister company to Sky Broadcasting) broke down over the BBC's decision to show *24* over FTA satellite. Now the latest series, featuring Keifer Sutherland as Jack Bauer (possibly the unluckiest man alive) will be shown on Sky One in February.

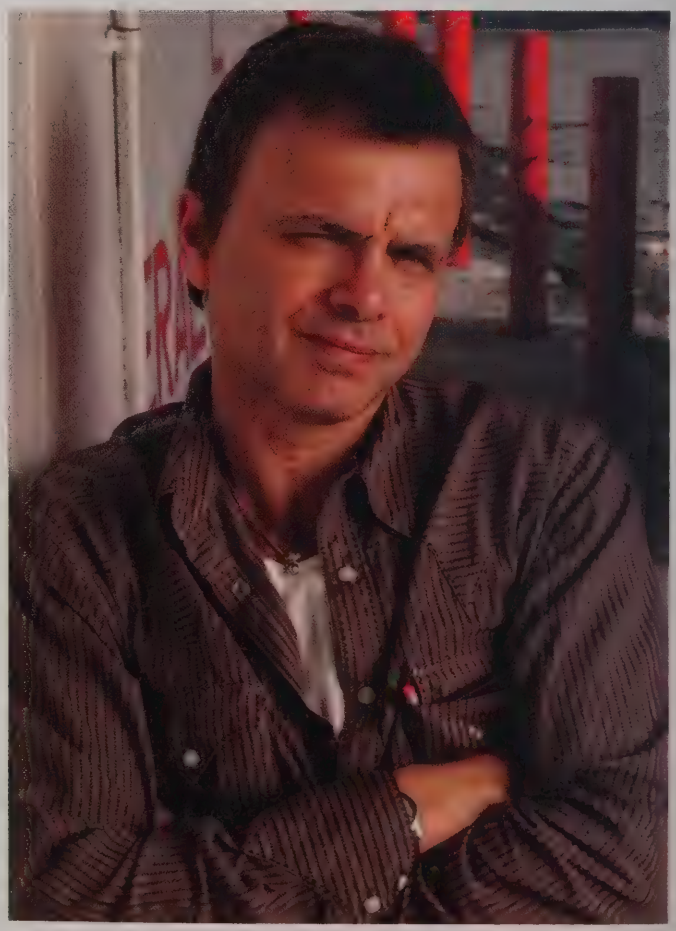
In this series Bauer's daughter is working at the Counter-Terrorism Unit (surely a bad idea?) and President Palmer is in trouble (again).

The Handler is a new series for Sky. The show stars Joe Pantoliano (Ralphie in *The Sopranos)* as an FBI agent who trains and handles undercover agents. The series follows Joe and his team of four agents investigating crime in the Los Angeles underworld, while trying to stay in the law.

In *Jake 2.0,* Christopher Gorham (of the short-lived *Odyssey 5)* plays Jake, a low-ranking computer technician for the National Security Agency who is accidentally injected with nanobots. Jake – now endowed with superhuman speed, strength, hearing and healing and the ability to connect with computers telepathically – becomes a special operations agent for the American intelligence agency.

In Autumn Sky One plans to show *Hex,* a three part miniseries about a 17 year-old girl who discovers she has been bewitched with magical powers. Sky One hopes *Hex* will be as popular as *Buffy the Vampire Slayer* – one of the most popular series the channel has shown.

The third series of *Alias* – the family-based espionage drama – will probably not be seen on Sky One, due to falling audiences.



The Handler is one of the new series Sky will be showing this year

Spreading Sky all around

Triax have released a new signal distribution device for home users.

The Domestic Distribution Unit (DDU) can send a satellite signal to up to five TVs (one main outlet and four others).

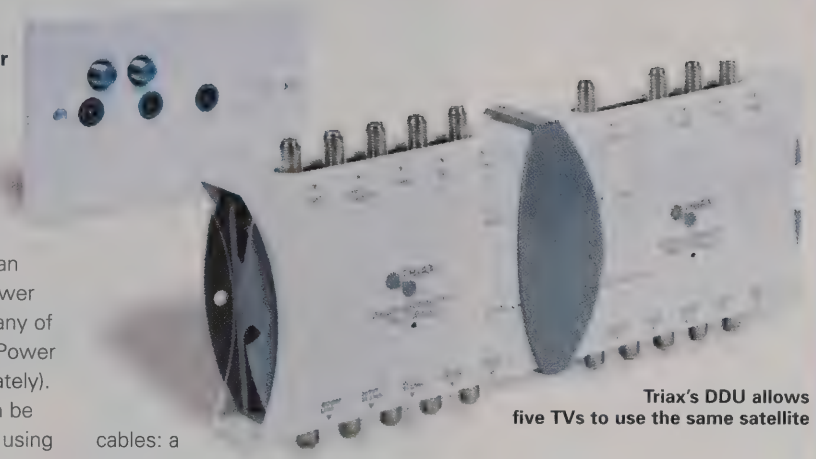
The DDU is discrete and can be powered by a plug top power supply (included) or through any of the four outputs using a DC Power Inserter Unit (available separately).

Four additional outputs can be added to the DDU Base Unit using the DDU Upgrade Unit. When using a quad LNB, the Upgrade Unit gives two additional satellite output points and access to PVR applications at the main TV point.

To complement the DDU, Triax have also released two new outlets: the DDU Outlet and SAT II Outlet.

The DDU outlet is specifically designed for use with the DDU.

This device uses two input cables: a triplexed feed for satellite/TV/radio signals from the DDU, and one providing the return signal from the RF Out2 Port of the Sky receiver. The second cable also carries a second satellite feed, for accessing PVR applications when the DDU Upgrade Unit is installed.



Triax's DDU allows five TVs to use the same satellite

The SAT II Outlet is designed to allow access to PVR and Sky Plus applications. It has three input cables (a triplexed feed (for satellite/TV/radio feeds), a second satellite feed (for PVRs and Sky Plus) and a third for the return signal from the RF Out2 port of the Sky receiver.

The front panel of the outlet contains satellite 1, satellite 2, TV, radio, return and UK telephone connections.

Triax, 0845 601 0578, www.triax.co.uk

AVC prices released

AVC has announced the charges for its satellite internet service which can be picked up by Sky minidish owners.

There are three packages on offer: 256kb/s average speed for £27/month, 512kb/s average speed for £35/month, and 768kb/s average speed for £44/month. These prices do not include the computer's own dial-up, ISDN or broadband connections.

The service will be supplied through a 48cm oval dish aimed at 28°E, using a quad output LNB. This is supplied new, even if you already have a Sky system.

Connection to PCs will be provided through an external USB satellite receiver.

Full installation will cost £250, but connection will just be £30 for those who fit their own dish and receiver.

AVC, www.avcbroadband.com

Spaceship One nearly crashed on landing after a successful test flight

Touching the stars

Spaceship One – a privately-funded spacecraft – broke the sound barrier on its first in-flight rocket test, but the test had a rough ending.

During the test flight Spaceship One detached from a carrier aircraft at 50,000ft, before accelerating to Mach 1.2 in a vertical climb.

The craft – carrying a single crewmember – reached 68,000ft, before turning in near-weightless conditions and gliding in for landing.

But on the ground the craft's landing gear retracted causing it to veer off the runway. The pilot was unhurt and the craft was only slightly damaged.

Spaceship One's builder, Scaled Components, is one of the favourites to win the $10million X-Prize for putting three people in a sub-orbital spaceflight using a reusable vehicle.

NEWS SHORTS

DIGITAL HORSES

WIDER WORLD CUP

POLAND IN MURDOCH'S SIGHTS

SOMETHING NEW

AEPOC GOES EAST

GOT AN OPINION OR QUERY TO SHARE? WRITE TO SATELLITE & DIGITAL CHOICE EDITOR GRANT RENNELL AT 53-79 HIGHGATE ROAD, LONDON NW5 1TW, OR SEND AN E-MAIL TO WVBETSAT@.AOL.COM

Solus is too much

I am one of the many who do not subscribe to Sky, and now have lost UTV, Channel 4 and Five. I complained to our local ITV about losing these channels, but they were not interested and tried to pass the buck to Sky.

As a person who cares for disabled parents, this is the only way they receive these channels, and on a low incomes, £24 is too much. Maybe if they have priced the card at about £5, it would have been reasonable. Your magazine is brill.

– Joseph Cox, by email

I want to add my voice to the growing number of people calling for ITV, Channel 4 and Five to also be available free on Astra 2D.

Also, as the BBC has moved all its channels across to Astra 2D, why has this not included UK History? I though that this was also a BBC channel.

– Graham Oxford, by email

■ ***Many people will be disenfranchised by the £24 charge for Solus cards, for as long as it lasts anyway, and there will have to be an exemption for the disabled and others who already find the blanket £125 TV Licence Fee a difficult burden.***

It is about time that the commercial channels discovered that there is more to public service than just making popular programmes, they have to be accessible too.

That doesn't apply to UK Gold, which is produced by UKTV using archive BBC shows.

Audio only

Are there any receivers out there with a built-in amp and speaker, so I can listen to the radio stations only?

– Terry Johns, by email

■ ***As far as we are aware, nobody produces such a satellite receiver.***

With so many radio stations using Astra 2/Eurobird 1, and broadcasting in high quality, it would seem there would be a market for such a machine.

One problem would be in setting up the receiver and selecting the right channel without any kind of onscreen help.

However, many receivers these days have quite extensive front panel displays, so it's not beyond the wit of man.

However, at the moment the only satellite receivers with built-in amplifiers and speakers are with a built-in TV screen too! The AMT Satcruiser tested in the Winter 2003 issue would do the trick, but this is probably not what you're looking for.

Satellite headaches

I have a motorised satellite dish. A neighbour has contacted me say that he and his wife are getting a lot of headaches and that as my satellite dish points towards their house, that could be the problem so could I move the dish.

I have now moved the dish but would like to know if you know of any information concerning this subject, as other neighbours may complain now I have moved the dish.

– David Underson, by email

■ ***Your dish was not pointing at their house, although it may have seemed that way. An offset dish can appear to be pointed horizontally as it is designed to keep the reflector vertical so that snow and rain will run off, but it is aimed towards satellites in space.***

A satellite dish is designed to focus the extremely weak signals from the satellites on to the LNB. Even when these signals are focused, they are only

Wherever you put it, the signal received by a satellite dish is not strong enough to cause headaches

strong enough to be detected by the sensitive electronics in the LNB (they are far weaker than signals received by a TV aerial). It is unlikely that this signal could be detected more than a few meters away, and it could not penetrate the walls of your neighbour's home. In contrast, the electrical wiring in your home can generate a signal of 50Hz, which has been suggested is powerful enough to cause cancer.

Your neighbour's headaches are certainly not down to your satellite dish, but they would be wise to investigate their true cause – regular headaches are a symptom of carbon monoxide poisoning due to faulty gas flues.

Expat choices

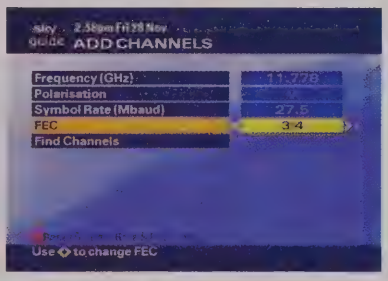
Like many other expats/British Forces, I have Sky from an existing UK subscription. I would like to upgrade to Sky Plus or purchase a PVR that will pick up European (German/French) TV, but Sky doesn't acknowledge subscribers abroad. I basically haven't got a clue where to start.

– (Name withheld), Germany

■ ***A Sky Plus will pick up FTA foreign channels if fed with the right signal. A 60cm dish aimed at Astra1 19.2°E or Hot Bird 13°E will get plenty of German and French TV.***

However, you will have to tune in each channel using the Sky Plus's Add Channels menu and then select them for viewing with the Other Channels menu. It's not very convenient and prone to loss of the channels and having to start again. Nor will you be able to record these channels on the Sky Plus's hard drive.

Instead, you should keep the Sky system separate from the other channels. You can buy a FTA DVB receiver and connect this to the new dish. If you buy a receiver with a PVR hard drive then you will be able to record these channels too. Any local (German) dealer or installer should be able to advise you on this and supply the equipment.



Channels added manually to a Sky Plus cannot be recorded to the Digibox's hard drive

A slippery slope

So the new alpine skiing season has started with existing finishes and great snow conditions in Sodlen. The last weekend in October always heralds the start of the World Cup Season. Hermann Naier, Bode Miller and Martina Ertl were all there. German and Austrian TV channels Das Erste and ORF were there providing great live coverage and interviews.

But where were you Eurosport?

Thank goodness those nice people at The Satellite Shop fitted me up with a new motorised system that brought me the live skiing that thousands of us have been waiting for all summer. And thank you, Das Erste and ORF – you were there when none of the sports channels in Britain were to snow.

– Lou Gauger, Inverness

■ ***Eurosport said: 'Unfortunately, we did not have the rights to broadcast the first race of the season in Solden. Out Alpine Skiing World Cup coverage starts with the second round, live from Park City. Eurosport will broadcast over 100 hours of Alpine Skiing World Cup this season – our winter sports offer is the most complete in the world as it includes the coverage of the World Cup, World Championships and European Championships of 12 winter sports. This represents over 700 hours of broadcasting, the majority of it live.'***

Eurosport: Still behind winter sports

QUICK QUERIES

I have a question about free-to-air satellite TV satellite receivers. Can I add an CAM (as an external device) as an external device to them, like an external device in a PC?
– Mickey Law, Worthing

■ ***CAMs are external devices anyway, even though they are attached in a CI slot. Most FTA receivers have CI slots for expandability anyway.***

I recently moved house (only 1.5 miles) and after re-tuning the box I now only receive BBC programmes on my old Pace ONDigital box. No more ITV Channel 4, Five etc. Checking the Freeview coverage on www.freeview.co.uk, I can see that I had coverage at my old house, but the new house is apparently in a location with no coverage. I still don't understand why the BBC channels are perfect, but no others can be received. Can I do anything?
– Sue Jonestown, Wonersh, Surrey

■ ***It seems that from your house, the BBC multiplex is just strong enough for reception, whereas the others are below the threshold.***

You may be able to receive more channels by installing a high gain aerial or buying a new Freeview adapter with a more sensitive tuner.

When I change my Panasonic Digibox receiver to output RGB signals, the pictures start to break up (pixellate) on some channels. On normal PAL output the picture is fine. Any ideas?
– Donal Walker, by email

■ ***This is normal for a TV that is not compatible with the Digibox. Try switching off your TVs 100Hz display or its digital processing and other fancy features that don't improve pictures from a digital source. Otherwise don't use RGB!***

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TFTV 20" LCD £1099
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Manhattan Manhattan Plaza 3300 + 2CI £149

Manhattan Starlight 6900 + Matrix Reloaded & 2CI £299

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motorised satellite systems

	Receiver Positioner	80CM Dish	90CM Dish	1.0M Dish	1.2M Dish
Dish Pack Only		£159	£169	£179	£259
Echostar AD3600 viaccess 2CI	£349	£508	£554	£538	£618
Echostar DSB 880 2Ci	£129	£249	£259	£279	£N/A
MATRIX RELOADED	£299	£458	£469	£479	£558
Manhattan Starlight 6900 ucas 2CI	£319	£479	£489	£499	£619
ECHOSTAR 808 2CI	£149	£299	£309	£319	N/A

All above systems come complete with Polarmount dish, Actuator & Universal LNB.

Infinity USB Programmer £45

Echostar 808 Viaccess £220

SHARP 0.3 LNB £45

NOKIA 210S Viaccess £179

NOKIA 9902 HDD £349

Samsung Receiver DSR9500ViaCi £199

Diseqc 1.2 H-H Mount £85

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Up for grabs!

Two Humax PVR-8000T personal video recorders!

The kind folks at Humax – one of the biggest manufacturers of TV set-top boxes – are giving two *Satellite & Digital Choice* readers the chance to win one of its latest personal video recorders – the PVR-8000T.

The PVR-8000T has a 40GB hard drive which is capable of recording up to record up to 20 hours of programming from Freeview, and you can watch analogue TV at the same time.

Recordings can be programmed using an electronic programme guide, and start times and duration for the recordings can be set so you don't have to rely on the EPG.

Because PVR-8000T records broadcasts in their original digital form, there is no deterioration in picture or sound.

All the functionality of a VCR has been kept, including pause, forward and reverse picture search and slow motion. There is also a time shift function, that can pause live TV for up to 30mins.

The PVR-8000T also has all the abilities of Humax's powerful F2-FOX T Freeview adapter, including: automatic tuning, 3-D on-screen display, four games, five favourite lists, and an MHEG-5 software for accessing interactive services.

There's also a Dolby Digital optical audio ouput, two Scart sockets and together with composite video and steoreo phono outputs. The latter means the PVR-8000T can be linked to a hi-fi system for making the most of stereo audio broadcasts.

For more details on this and other Humax digital TV products go to www.humaxdigital.com/uk or telephone 0208 5414241.

To win one of these incredible machines, just the question on the coupon and send it in. Closing date is March 5, 2004.

COMPETITION WINNERS

We had five Pioneer DBR-TF100GB Freeview adapters to give away in the Winter issue of *Satellite & Digital Choice*. The winners are A.W. Sawford, Northampton; Malcolm MacDonald, Isle of Lewis, Scotland; Carol Williams, Shropshire, George Gorgan, Hampshire; and Brian Jones, North Wales.

1. Entrants must be over 18 years old and resident in the UK. **2.** Employees of Highbury House Communications and companies supplying the competition prize are ineligible to enter. **3.** Proof of posting will not be accepted as proof of delivery. No responsibility will be accepted for entries lost, damaged or delayed in the post. **4.** No alternatives, cash or otherwise, will be given as prizes. **5.** The winner(s) will be notified by post. **6.** The editor's decision is final. **7.** Entries for this competition must be received by March 5, 2004 **8.** Entries will be drawn after March 5, 2004. **9.** No purchase is necessary.

HUMAX PVR 8000T COMPETITION ENTRY FORM

Question: How many hours of digital terrestrial TV programming can the PVR-8000T record?

Answer: .....

Please tick any of these that you own
☐ Home computer
☐ Cable/satellite connection
☐ CD/video
☐ Credit card

Please tick your age group
☐ under 35
☐ 35-50
☐ 51-60
☐ 60+

Please tick the occupation that is closest to yours
☐ Office/clerical/trade
☐ Professional/management
☐ Student
☐ Retired

Name .....

Address .....

.....

.....

Post code.....

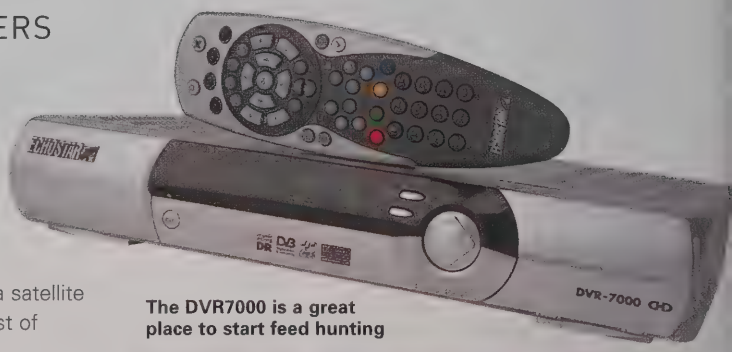
Telephone No.....

Post the coupon to: ***Satellite & Digital Choice* Humax PVR Competition, Highbury Entertainment London, Unit 601, Highgate Studios, 53-79 Highgate Road, London NW5 1TW**
Closing date for entries: March 5, 2004
Entries must be on the form. Photocopies are acceptable.

We do make our mailing list available to other selected organisations whose products or services may be of interest to you. If you would prefer not to be included in such mailings, please tick this box ☐

Satellite Direct

WITH A SATELLITE DISH, THE RIGHT RECEIVER AND A LITTLE KNOWLEDGE, YOU CAN TUNE INTO THE BEHIND-THE-SCENES BROADCASTS THAT MAKE UP OUR TV CHANNELS. JOIN THE FEED-HUNTERS



The DVR7000 is a great place to start feed hunting

You may think you're well ahead of the pack, using a 70cm dish to pick up RAI Uno on Hot Bird, especially if you've got a motorised system that can pick up German TV at 19.2°E and NBC on 15°W.

You'll think you're even further ahead if you've boosted up your internet access by a satellite downlink, but you are still not making the most of your equipment.

That accolade is reserved for a group of enthusiasts who call themselves feed-hunters and DX-ers ('DX' comes from ham radio enthusiasts who listen out for signals from far-distant transmitters). For these people, satellite isn't about watching programmes and films, it's about catching the behind-the-scenes broadcasts that make up the TV channels.

There are a lot of communications satellites orbiting in the Clarke Belt 36,000km above our heads, and around half of the capacity on these birds isn't used for ordinary TV and radio channels, but for occasional use traffic.

Occasional use refers to the signals sent by outside broadcast trucks – news reports, sports coverage, concerts and so on – and to the contribution feeds used by broadcast organisations like Sky and the BBC to swap footage around the world. When major events occur, it isn't just the news organisations who start using the satellites, feed-hunters around the world start looking for their signals.

"The feed-hunter's challenge lies in finding the feeds while they're being broadcast."

It's easy to pick these up, because most feeds these days are sent in the same MPEG2 DVB format as ordinary digital TV signals. News feeds are usually free-to-air, although sports and other valuable footage is often scrambled.

The feed-hunter's challenge lies in finding the feeds while they're being broadcast. Occasional use transmitters hire a slice of satellite capacity for however long they think they'll need it, either direct from a satellite operator like New Skies Satellite or Eutelsat, or a broker like Globecast or Reuters.

Some major broadcasters regularly hire the same slots, or take a long-term lease of satellite capacity, and feed-hunters can rely on finding something interesting at these hot spots. More occasional users will be given a set of uplink and downlink tuning details, which only last for the time they're on air. Even in regular slots, details like the symbol rate and FEC might vary while the frequency and polarity stay the same.

This means feed-hunters look for special features in their satellite receivers – and they've usually got several. A sensitive tuner is obvious, and you'll also need a wide symbol rate range, and the ability to scan the same frequency for several symbol rates. You'll also want a large satellite database, full control to edit the satellite and transponder list, and lots of memory for transponders as well as individual channels.

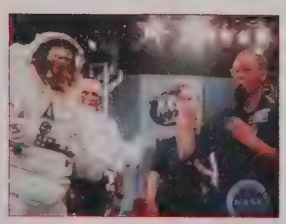
The incoming signals from satellites used for feeds aren't all that strong, so a fairly large dish and good quality LNB with separate polarotor will also be high priorities, and of course, the system has to be motorised so you can get to all the different satellites employed by occasional use traffic.

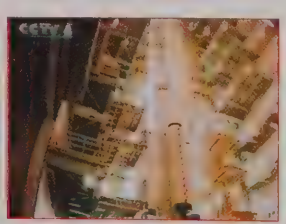
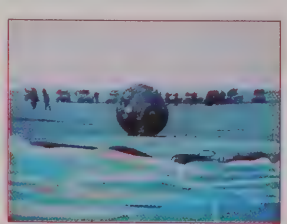
Finally, you'll probably want some way to share your finds with other feed-hunters, and you'll need to know how to get in touch with the tens of thousands of feed-hunters worldwide.

Receivers

The receiver is the heart of any satellite enthusiast's system and feed-hunters are especially demanding of theirs, both in terms of features and performance.

First, there are the physical characteristics – you'll want an LNB loopthrough to allow a second receiver to be linked in. Many feed-hunters have several receivers, not because they're greedy, but because variations in the software enable one receiver to lock on to odd signals when a different model won't tune in.



Having a large dish gets you more satellites, but you may need planning permission first

Picture quality isn't always a priority for feed-hunters, but several Scart sockets can be useful to loop through another receiver and VCR, if your TV doesn't have many Scart sockets itself. For the same reason, many feed-hunters use the UHF outputs, daisy-chaining the cables between machines because it's then easy to switch just by changing TV channels.

Many feed-hunters have been in satellite for quite a few years, but even so it's unusual to find anyone using a separate positioner box these days. The majority of feed-hunters use a built-in 36V/5A positioner, which is powerful enough to drive large dishes.

DiSEqC motors don't have the power to drive these dishes at any sort of useful speed, but if you insist on a receiver with DiSEqC 1.2, you could always use an external motor interface, which converts DiSEqC directional pulses and drives a traditional 36V/5A motor.

Finally, you'll need a built-in polariser drive, to be spot on with the skew for any satellite. Not all satellites broadcast their horizontal and vertically polarised channels in the same plane and the difference between satellites is known as the skew angle. A polarotor will put your LNB in the correct plane for each satellite.

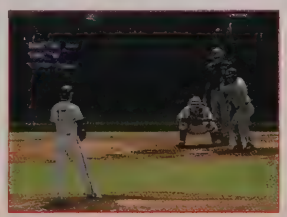
Software features are very important to feed-hunters. For a start, the receiver should be able to display accurate signal strength and quality meters while you're inputting new tuning parameters, it should have a wide symbol rate range, in the 1000-32000 or 1000-45000 range (it's the low end that matters).

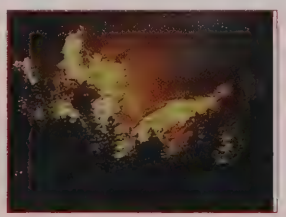
Symbol rates are the most variable feature of the channels you'll be looking for, so the receiver should be capable of scanning at unusual symbol rates – there are several commonly used figures. Typically this will be because you can edit the transponder list to have the same frequency and polarity scanned several times with different symbol rates.

'Navigating between the satellites will be a crucial role for your main receiver and you'll want some kind of auto-positioning to make life easier.'

Humax receivers allow you to set up to four symbol rates with which the receiver will scan any transponder, in addition to the usual suspects like 22000 and 27500. This slows the scanning process but is effective for searching single transponders.

The best receivers have a blind search feature – they can scan without the help of a transponder database, quickly identifying active frequencies and finding the





Dish Sensitivities

The biggest obstacles to having a big dish for snooping on feeds often aren't technical, but social. British planning laws place unreasonably strict limits on the size and number of dishes a home can have – in most areas of the country you can only have one dish of up to 90cm without applying for planning permission.

In conservation areas, this goes down to 70cm and there are some boroughs and local authorities which do not allow satellite dishes at all without special permission (Westminster is a notable case).

The best way to avoid dealing with jobsworth town planners is to make sure no one objects to your dish. The only people likely to complain to the authorities are your neighbours, so either make sure your dish is well-hidden (often difficult if you want a good view), or make sure your neighbours don't mind before you put it up (and don't forget to send them a card and box of chocolates at Christmas!).

The huge success of Sky Digital, the general popularity of satellite TV, and the possibility that the current regulations could infringe the latest human rights laws, have lead the Government to look at relaxing the restrictions on satellite dishes. The new regulations are expected to be announced early this year, and while we don't expect to see a total de-restriction, it's likely most homes will be allowed a small Sky-style minidish as well as a larger dish for general purposes.

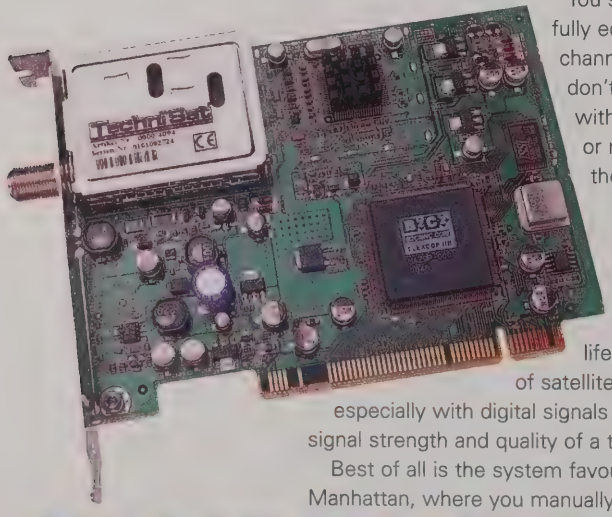
***Satellite & Digital Choice* will keep you up to date with the latest developments in satellite dish regulations.**

polarity and symbol rate themselves. The software and processing power to do this are relatively new, but Coship, Innovia and others have all produced blind search receivers in the past year.

There should be a comprehensive satellite database, and you should be able to edit this manually, or at the very least it should be regularly and accurately updated by satellite downloads or through a PC. New satellites don't launch very often, but over the lifetime of your equipment you'll undoubtedly see a few go up, and several move around in orbit, so you'll also need to be able to add new locations, or know that the list will be updated for you.

Lots of memory is important: at least 5,000 TV and radio channels, but also at least 999 transponders. Few manufacturers list this figure, although Echostar knows it's value to users, and makes a point of listing it. Without a large number of transponders, you may not have enough for all those symbol rate combinations.

Some enthusiasts have written their own software for sat-PC cards, like the Skystar 2



You should also be able to fully edit and re-order the list of channels, deleting signals you don't want, renaming others with something more useful or memorable, and putting them in a useful order.

Navigating between satellites will also be a crucial role for the main receiver and an auto positioning will make life easier. Finding dozens of satellites manually is tedious, especially with digital signals where you only have the signal strength and quality of a transponder to go on.

Best of all is the system favoured by Echostar and Manhattan, where you manually find the satellites that are the furthest east and west in your dish's range, plus the central satellite, and the receiver calculates all the intervening positions. It's reasonably quick and receivers only occasionally make mistakes.

The alternative is for the receiver to scan across the skies looking for high quality signals from a set transponder on each satellite. This can take a long time, and there's no guarantee the receiver won't mistake one satellite for another.

You'll sometimes find other enthusiasts reporting feeds (or at least a signal header) which your signal meter registers but which won't lock on. This doesn't mean your receiver is rubbish: there are video formats in use other than MPEG2, and some receivers can read the headers for these, while others will just refuse to acknowledge them. Sometimes two receivers will even show different header information for the same feed. This is why feed-hunters often end up using three or four different receivers to find their quarry.

Using your PC

If you've already got a decent PC, then it's very easy and cheap to upgrade it to a satellite receiver, with PCI cards the Technisat Skystar 2 costing just over £50.

If you've already got a motorised receiver, then software like ProgDVB (www.progdvb.com), DVBviewer (www.dvbviewer.com) and DVBapps (www.dvbapps.com) can be used to scan any satellite and check individual transponders. The advantage of using a PC is that there's no memory restriction on the number of channels or transponders you can have, and the software is very easy to customise with your own satellite, transponder and channel lists.

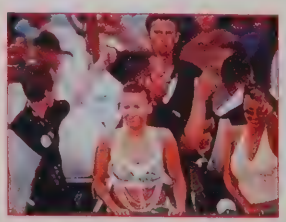
You'll also find that computer-savvy feed-hunters have put together their own useful utilities for the more popular cards like Technisat's Skystar 2, enabling you to scan a transponder for PIDs. There's even a simple spectrum analyser for Broadlogic cards on the DVBapps website, which is free to download, which could be used to find the most likely frequencies for feeds on a satellite.

PC cards can also be used to pick up some of the more unusual signals. If you can find the video Codecs on the internet and your PC has sufficient power, you'll be able to see the MPEG 4:2:2 video signals or high definition MPEG2 signals, which only expensive professional rack-mount equipment can usually pick up.

Dishes, motors and LNBs

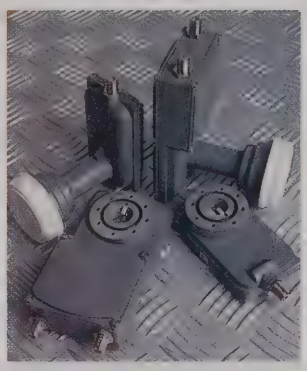
Satellite signal strengths have increased hugely in the past five years, and direct-to-home channels now rarely demand more than a 70cm dish. Effective feed-hunting, starts with an 80cm dish, but most hardcore enthusiasts use a 1.2m dishes, or even 1.5m and 1.8m dishes.

The area of your dish, and hence its signal-gathering power, increases as a square of the radius, so it's easy



Left: Conventional motorised dishes can be expensive

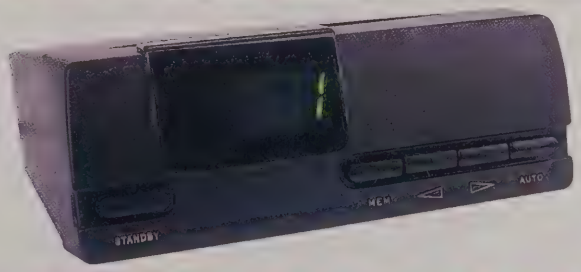
Below: A universal LNB should be the focal point of your set up



to see that getting a bigger dish is the easiest route to picking up exotic feeds. There are limits to dish size in the UK, as you can see in Dish Sensitivity (see boxout).

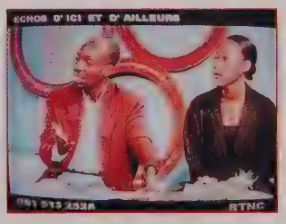
The question then becomes whether you should have a prime focus or offset focus dish. Offset dishes have become popular because they're cheaper, but also because the LNB and arm don't block the signal, and rain or snow (which block satellite signals) fall off the almost vertical face very easily. Prime focus may be the only option with larger dishes because it's a stronger design, but they're more expensive and can become rain-catchers.

The larger dishes (1.2m and above) can be only driven by a 36V, 5A motor, preferably on a polar mount with a jack actuator. A DiSEqC 1.2 mount may be compact and easy to set up, but its 500mA power supply can't drive anything more than a 1m dish, and even that will move slowly. Jack actuators tend to swing around behind the dish as it turns, so you'll need space behind your dish, which means a wall mount is out if you want your dish to have a decent range of movement.



Above: A multi-feed dish can receive several satellites at once

Left: A DiSEqC interface is one way to get your dish moving



Wobbly birds

One small group of satellites where you can be sure to find unusual signals are the inclined orbit satellites.

These are old satellites which have nearly run out of fuel, and to keep them going for a few years longer, the satellite operator has stopped controlling their movement north and south of the Clarke Belt.

As time goes by, the satellite develops an increasing wobble, and a normal satellite dish will only be able to see it as it crosses the Clarke Belt. What you need is an inclined orbit mount, which has a second motor allowing the dish to move up and down.

Inclined orbit tracking equipment is very rare and quite expensive, so most enthusiasts who want to catch these satellites have had to build their own using a second motor and positioner, and a mount specially built to move in both directions. Last year Technomate launched an affordable inclined orbit mount for the enthusiast, which works with its TM-5500DAPCI receiver.

The receiver has both DiSEqC 1.2 and conventional 36V motor control, and uses both, along with an Aston DiSEqC interface, to drive two standard 36V jack actuators.

Satellites usually only last for a few years in inclined orbit before they are retired to a very high altitude graveyard orbit, so there aren't many, but the most famous are Astra 1A, which orbits at 5°E and has a 2.2° inclination, Eutelsat II f2 at 48°E with a 3.5° inclination, Eutelsat II f3 at 21.5°E with 2.7° inclination, and Telecom 2A at 3°E with a 2.3° inclination.

If you're starting with a smaller dish, then you could choose a cheaper DiSEqC 1.2 system. They're easy to install, especially with the USALS software which enables a dish to automatically locate satellites after focussing on a single reference satellite. You could move up to a bigger dish later with a 36V-to-DiSEqC motor interface to control it, using the same receiver.

Your vantage point is crucial. Feeds are found throughout the Clarke Belt, but in Britain there's special need for a good view to the west to pick up satellites located over the Atlantic, and to the east for incoming signals from the Middle East, Russia and beyond.

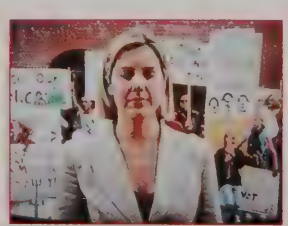
Unfortunately, the far eastern and western satellites are close to the horizon, so you'll need to get high up to avoid trees and buildings in the way. The best way is to mount your dish on a pole rising above your roof, or on a flat roof. The luckiest feed-hunters live in high buildings with access to a flat roof, or on a hill with no trees or urban clutter to impede their view.

A solidly-constructed universal LNB with a noise rating of around 0.5-0.7dB will be quite adequate for your feed-hunting needs. It's possible to spend a lot of money on low noise LNBs which claim to introduce less than 0.3dB into the signal, but this is really a tiny improvement, and the money would be better spent on buying a larger dish, or investing in a flanged LNB with a separate polarotor.

A polarotor physically rotates the waveguides used to select polarity and allows you to put your LNB in the correct plane for any satellite. The polarotor kit will also contain a set of feedhorns, which can be adjusted to match the size and configuration of your dish, or you can buy your own feedhorn kits from companies like Chapparral or Swedish Microwave.

A polarotor will require a C120 flaged LNB. This is an LNB without its own feedhorn and polariser, with flages to which a polarotor and feedhorn can be attached.

You may want to have a twin-output LNB, so you can feed both your satellite receiver and a PC card, or even more outputs if you want to be able to access the LNB



with several receivers at once. Quad-output universal LNBs are now quite common and have very acceptable noise figures, and we've even seen a 0.7dB Octo-LNB (with eight outputs) recently arrive from Televes.

Extras

The most well-equipped feed-hunters manage to get their hands on a spectrum analyser. Satellite spectrum analysers cost at least £1,000, although you could pick one up secondhand for less.

Spectrum analysers are very useful for picking out the active transponders on a satellite where you may not know the full transponder list, especially if it is a new satillite. You might even be able to pick up the test transmissions of a satellite while it's being tested, which usually happens in a different position to its final orbital slot. Now that's a coup.

PC cards can also be used to pick up satellite feeds in different video formats, which ordinary MPEG2 DVB satellite receivers can't decode.

Popular receivers

Few receivers have every feature to satisfy the dedicated feed-hunter, but for many years, Echostar has been the most popular brand, offering good picture and sound quality, reliable design, auto positioning, full control over the channel list, lots of memory, and a simple user interface. The Echostar AD-3000IP was a firm favourite for many years, and its successors the AD-3600IP and DVR7000 (with a 40GB hard disc drive) are both popular.

Three years ago, Echostar introduced its Echonav software, a radically different user interface which offered an enormous amount of control to the advanced user. Echonav was also very different to previous systems, and had a steep learning curve which many resented. Most people have now got used to the software and appreciate its benefits, although its still the subject of much debate.

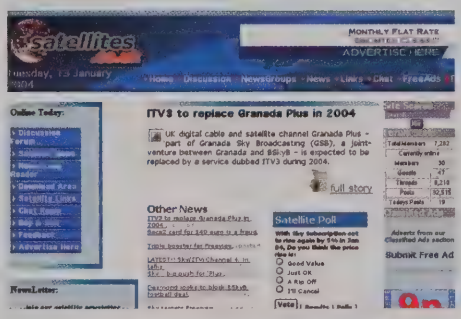
Manhattan was once Echostar's closest competitor, and while they're still solid, simple-to-use machines, there's been competition for the lower-priced enthusiasts recently from Technomate, which offers very similar receivers and low prices.

RSD receivers were once very popular for their blind search powers and ability to pick up channels other receivers struggled with, but the brand has been defunct for several years now. Coship's CDVB 3188C, Innovia's IDS-3088S and Powtek's DVB-FTAM002 receiver offer very good blind search features, and have received acclaim from feed-hunters.

Humax receivers can be programmed to scan unusual symbol rates, although there are no Humax models with conventional 36V positioners. The Dreambox has attracted a great deal of interest lately because it's based on the Linux open source PC operating system, so anyone who learns Linux can reprogram it to meet their needs, including special scan modes and database editing.

For instance, the European Broadcasting Union exchanges large volumes of footage over 3°W at 7°E (among other spots), but it uses the high quality, high compression MPEG 4:2:2 standard. The ProgDVB software can be used to watch this, and to decode MPEG2 high definition signals from Euro1080 on Astra 1, which normal receivers just don't have to power to display.

There are also weather satellites in geostationary orbit, and your PC can download incredible images from these using software from Eumetsat (www.eumetsat.de/en/ dps/helpdesk/ registration.html) or David Taylor's MSG Data Manager (from www.satsignal.net).



Sharing your success

Finally, you'll want some way to record your feed-finds and share them with other feed-hunters. The simplest way is to record videotapes and take pictures of the TV screen, but that doesn't yield the highest resolution or useful images.

Most analogue TV tuner cards for PCs will also have a composite video or S-video input, and the ability to grab images then save them to your hard disc.

If you want to go further and record the feeds, digital satellite receiver PC cards can all record video to your hard disc. Today's 80GB standard PC hard discs are big enough to store hours of video clips.

Alternatively, you could record feeds in broadcast video quality on a combined satellite receiver and PVR like Echostar's DVR-7000 or the GBsat 2CI60. Both of these have USB outputs for connection to a PC, where you can edit recordings or burn them to DVD.

The best way to reach other feed-hunters is through forums and newsgroups on the internet. Useful forums and websites include www.satellites.co.uk, www.dxers.co.uk, www.feedsat.com, www.dxmonitoring.com, www.dxworld.com, and newsgroups like alt.satellite.tv.europe and rec.video.satellite.europe.

Sadly, both forums and newsgroups have a habit of being hijacked by people who only want to know how to get their pirate pay-TV cards working, and you may want to just start up your own website or blog to let people know about the latest feeds you've found. ■

Hot Spots

Feeds crop up all over the sky, and you'll soon find yourself logging the best places to visit. To get you started we've collected a few frequencies which have been busy in the past few months, listed as Frequency, Polarity, Symbol Rate and FEC.

Eutelsat W4/Sesat 36°E
10.957 V 3254 5/6
10.958 H 6111 3/4
10.962 V 3254 5/6
10.966 H 6111 3/4

Eutelsat W2 16°E
11.134 H 5632 3/4
11.144 V 3254 5/6
11.169 H 5632 3/4
12.515 H 5632 3/4
12.525 H 5632 3/4
12.533 H 5632 3/4
12.540 H 5632 3/4
12.562 H 5632 3/4

Eutelsat W1 10°E
10.961 V 4167 5/6
10.964 V 4167 5/6
10.967 V 5632 3/4
10.972 V 4165 5/6
10.989 V 20046 3/4
11.014 H 6111 3/4
11.081 V 5632 3/4
11.090 V 5632 3/4
11.110 V 5632 FEC 3/4
11.554 V 28790 7/8
12.740 V 5632 3/4

Intelsat 707 1°W
11.587 H 6111 3/4
11.653 V 5632 3/4

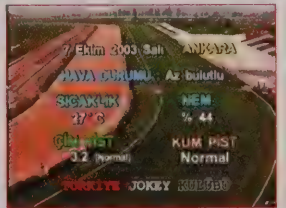
Telecom 2D 8°W
12.676 V 5632 3/4
12.703 V 5632 3/4
12.725 H 4215 7/8
12.737 V 6111 3/4

Atlantic Bird 1 12.5°W
11.014 H 20145 3/4
12.695 H 5632 3/4
12.714 H 6111 3/4
12.723 H 6111 3/4
12.740 H 5700 3/4

NSS7 21.5°W
11.563 H 6111 3/4
12.734 H 16635 3/4

Intelsat 801 31.5°W
11.028 V 5632 3/4

PAS3R 43°W
12.535 V SR5662 3/4



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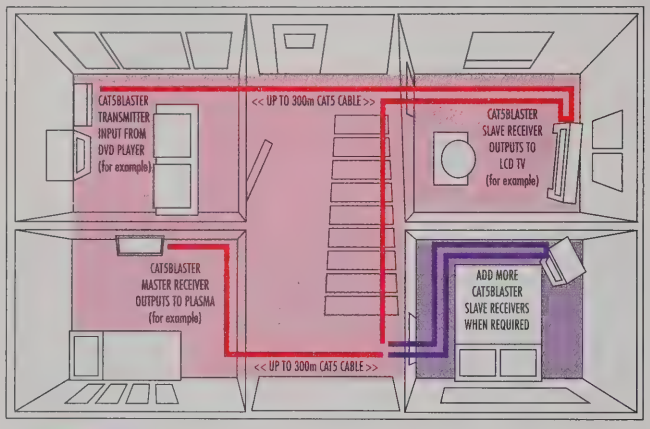

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Picture perfect

HIGH DEFINITION TV HAS ARRIVED IN EUROPE, OFFERING SHARPER PICTURES THAN EVER BEFORE. SATELLITE & DIGITAL CHOICE GIVES YOU THE LOWDOWN ON HOW TO GET IT

High definition TV (HDTV) has been on the cards for a number of years. The BBC is known to have experimented in the past with producing HDTV test transmissions of sporting events.

Currently, Australia the US and Japan lead the way, where satellite broadcasters currently offer a raft of pay-per-view HDTV services covering everything from sporting events to adult entertainment.

Europe's first taste of HDTV broadcasts arrived in January this year with the launch of two channels launched by the HDTV broadcaster Euro1080.

Essentially, high definition works by roughly doubling the number of lines in a current PAL TV picture which, compared with standard definition TV, delivers a vastly sharper and more detailed photo-realistic picture.

Euro1080 is owned by Alfracam, a Belgian outside broadcast company which has been filming sports and cultural events around Europe for years in hi-def.

Last year a free-to-air test loop was made available through Astra 1 at 19.2°E, but by the time you read this there should be two channels available – one free-to-air, which will eventually require the purchase a cheap one-off viewing card (around £70), and the other an events-based channel designed for transmitting to cinemas and other venues.

Although high definition TV broadcasts use the same MPEG2 compression standard as standard digital satellite TV, watching these transmissions is not as straightforward as just pointing your dish in the right direction.

This is because the broadcasts are transmitted in the 1080i resolution format. This uses two fields which are broadcast separately and then interlaced to create a complete 50 frame-per-second picture of 1,080 lines at 50Hz, with a horizontal resolution of 1,920 pixels.

One of the problems with conventional interlaced TV pictures is that they're prone to flicker. This is not a problem with progressive pictures which broadcast complete frames such as 720p (720 complete lines at 50Hz). This is a lower resolution than 1080i that also needs less compression to transmit.

The 1080i format leads to a bandwidth of some 20Mb/s – far greater than the 4Mb/s or 5Mb/s that most satellite receivers are designed to cope with. However, we are starting to see high definition-ready receivers come on to the market, such as the Zinwell ZDX-410HD (see page 30) – no doubt the first of many to come.

'With the right kit in place, setting up your PC to receive HDTV broadcasts is surprisingly easy.'

In contrast, entry-level PCs run at at least 1.5GHz and have 10 times the RAM of a satellite receiver.

If you've got a motherboard with an integrated graphics accelerator and sound card, then you'll need a very high-end PC. It's more effective to have an AGP video card with its own memory (with at least 32MB RAM) and a PCI soundcard. Add to this a PCI DVB tuner card, a software viewer, and a set of codecs for your viewer to interpret the compressed HD signals.

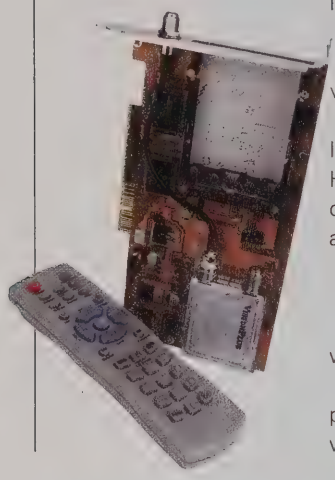
With the right kit in place, setting up your PC to receive HDTV broadcasts is surprisingly easy. Just follow our guide on page 28.

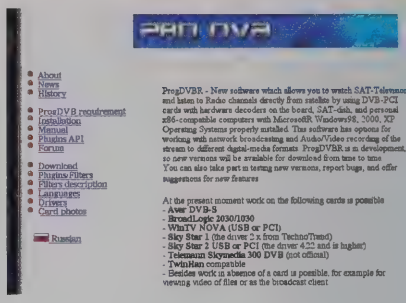
PC SETUP GUIDE

1. UPDATE YOUR DRIVERS

First, install your satellite receiver card with the latest drivers following the instructions given in the manual. Windows XP may object to the drivers from some receiver cards not being certified by Microsoft, but you can choose to ignore this. You may need to download the latest drivers from the satellite card manufacturer's website and make sure you have the latest video and sound card drivers, plus the latest version of DirectX.

2. INSTALL THE DVB VIEWER





If you already have a satellite PC card it's likely that the software viewer it came with won't be able to decode HDTV yet, so you will need one of the programs designed by enthusiasts: ProgDVB, DVB viewer or DVB apps.

Prog DVB is one of the most popular third-party viewers. It works with the popular Technisat Skystar 1 and 2 cards (left), Hauppauge WinTV Nova-S (and anything else using the Technotrend chipset), the AverTV DVB-s, Pinnacle's PCTV Sat, Twinham's VP-1020 and 1030 cards. See progdvb.com for details.

DVBapps (dvbapps.com) works with the Twinham VP-1020 or Broadlogic cards.

These programmes are freeware but we suggest making a donation to support their further development.

Owners of the Skystar 2 and other cards with a B2C2 chipset can also download the DVB viewer application, which is hi-def ready from the box, but also requires Windows Media Player (see www.dvbviewer.com).

Finally, visit the Elecard website at www.elecard.com/products/mpeg2decoder.shtml, to download the free codecs package. For an ATI video card you'll need to download the special Ravisent decoder from www.cineplayer.com/decoder.

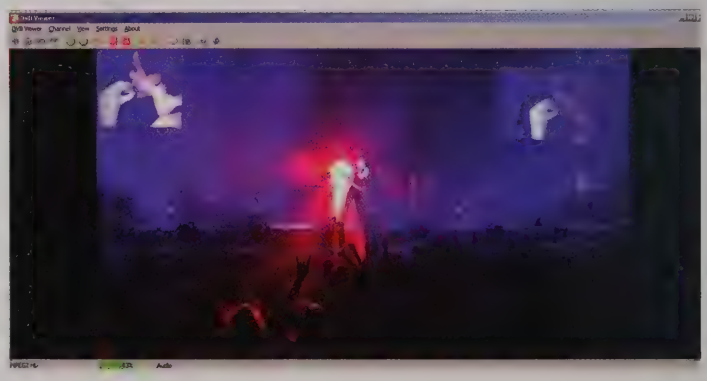
3. SCAN FOR CHANNELS

You may need to select your DVB card from a list of devices and activate an LNB from Astra 1 (which may be listed as Astra 19.2°E or Astra 1B-1H, 2C). This should be a universal LNB with LNB power switched on and DiSEqC switch options to suit your system.

In Audio and Video settings, check that the Elecard decoders are active and the correct sound output is used for your hardware. From Channel List, choose Scan transponder and enter the frequency as 12.168000KHz (it may also be 12168MHz or 12.168GHz) vertical polarisation, symbol rate 27500. Automatic FEC will be sufficient to find the channel but it's 3/4 if you need to set it.

Hit Scan and you should see the MPEG HD listed below. Select OK, then open the SES-Astra folder in your channel list and click on MPEG2 HD.

4. SIT BACK AND ENJOY THE RESULTS



Blown up to full-screen, the picture should be instantly better than any standard PAL DVB pictures, with a level of detail often compared to looking out of the window.

On a below-par system, you should still get hi-def quality even though the images are likely to be slower owing to processing and memory constraints. Faster images will tend to blur and pixellate, as will scenes with a lot of moving and detail like crowds, and whole scene changes will just dissolve into pixels for a few seconds. Audio will probably be very choppy too.

All you need now is something suitable for watching this amazing images on such as a big screen or projector.

Plasma perfection

Unless you have an enormous screen, HDTV images can seem wasted on a PC monitor. Conventional CRT TVs aren't up to the job either, as they aren't capable of generating the 1100-line resolution required.

If you're going to invest in an HDTV receiver you really need to look to a plasma or LCD screen to do HDTV justice. As prices are falling below the £2,000 mark for plasma screens, these are no longer out of the reach of the average man on the street who is hunting for big-screen entertainment.

Satellite & Digital Choice is unaware of any flat screen displays that exactly reproduce the 1080x1920 resolution format in all its glory (most high-end plasma displays have a resolution of 1024x768), although only the most eagle-eyed would feel cheated when watching stunning HDTV pictures on a 42in screen.

Features to look for when shopping around for a plasma screen for use with HDTV are component video inputs which deliver superior images to the likes of an RGB Scart connection. High-end plasma sets sport DVI inputs which, because they never convert from digital to analogue, offer amazing picture quality. Although support for DVI is absent from the Zinwell range, we hope to see this feature supported on future HDTV receivers soon.

"If you're going to invest in an HDTV receiver you really need to look to a plasma or LCD screen to do HDTV justice."

Zinwell ZDX-410HD

Dutch company Quali-TV is the first manufacturer to produce an HDTV receiver for the European market, but expect to see more such products from the likes of Humax and Panasonic in the next few months.

The Zinwell range comes in several varieties, including a free-to-air version costing €465 and one equipped with a built-in Irdeto CAM (€515). As Euro1080 is set to encrypt its signals in Irdeto 2 from May, it's probably worth paying extra for the latter (at least until more free-to-air HDTV signals make an appearance).

The ZDX-410HD is the free-to-air version and contains many of the features of a conventional receiver. It has a relatively bulky, smart silver case due to the extra components inside, and comes with a functional remote control that has useful feature buttons such as video format, aspect ratio and picture-in-picture.

The ZDX-410HD comes preset for watching Euro1080 on Astra 1 and up to eight satellite locations are available (including Astra 1, Astra 3A at 23.5°E and PAS 1R at 45°W). As you're limited to DiSEqC 1.0, however, you can only switch between four of them automatically.

You can search whole satellites using the network information table if you want to expand the transponder list, or just select or manually program a single transponder (which can also be used with the NIT).

The receiver is a little slow when undertaking a full scan of Astra, but there's enough memory capacity for thousands of channels – although oddly, only one favourites list can be created from what you find.

DVB EPG information is available in now-and-next format on the programme information banner, which also shows the time, programme format (HD for hi-def, SD for standard definition) audio format (MPEG or Dolby) and teletext availability. There is also a full-screen EPG display showing the day's schedules for the selected channel.

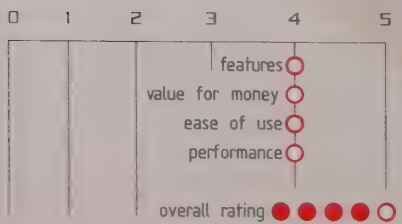
Hooked up to our NEC plasma display, the differences between using the low-grade composite video input and the far superior component video options are obvious even to the layman. Watching Prosieben through the composite connections, pictures results are blurry and unstable, and there's an instant improvement in picture stability and colour definition with component video. Pictures from the S-Video output are rather fetching too.

Tuning into Euro1080 – the end result of an 18Mb/s bandwidth broadcast (four times that of standard definition channels) – means that even composite video generates a decent picture with no noticeable pixellation.

Component video is the real deal, however, yielding richly coloured and incredibly detailed images that practically leap from the screen. Again, there's little pixellation on fast movement or complex images, such as running water.

Sound from the Dolby 5.1 optical digital audio output is exceptional, ensuring that Euro1080's Dolby Digital broadcasts sound as good as they look.

The ZDX-410HD is an admirable taster for what HDTV can do, even though it may be limited in other areas compared to a fully featured sat scanner. If you already have a dish and a plasma screen, however, it's a great way to make your entertainment setup the envy of your friends.



FEATURES: LNB input, LNB loopthrough, DiSEqC 1.0, 1,000 channels, eight satellites, optional Irdeto CAM, symbol rate range 1000-45000, teletext, EPG, component video output, S-video output, composite video, stereo audio, optical digital audio output, serial port

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PROS AND CONS

- ⊕ Stunning HDTV pictures
- ⊖ User manual needs improvement

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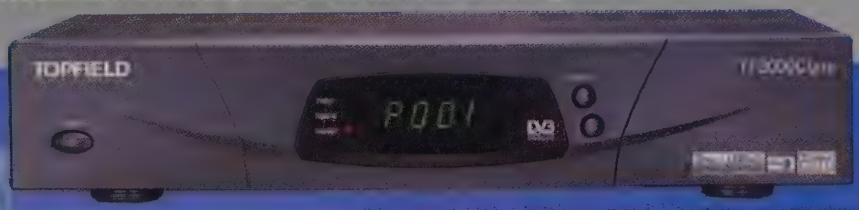

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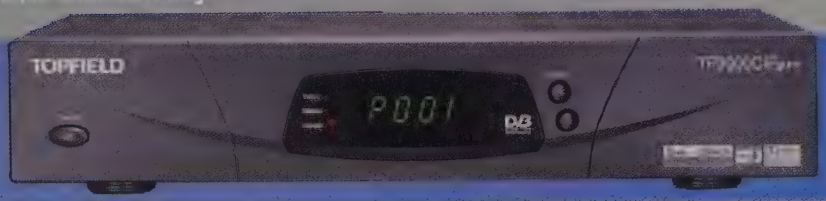

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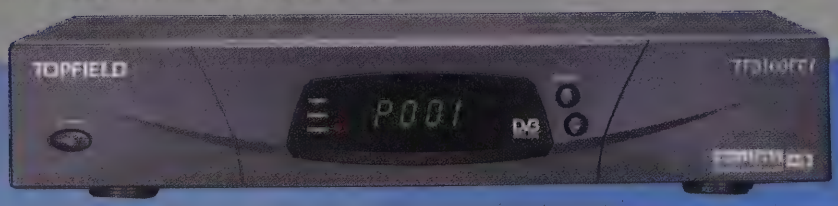

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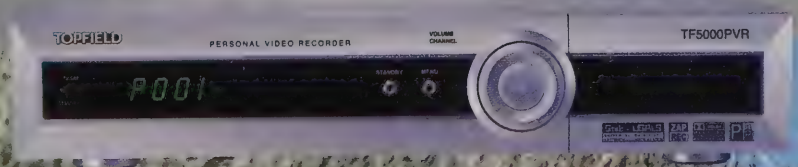

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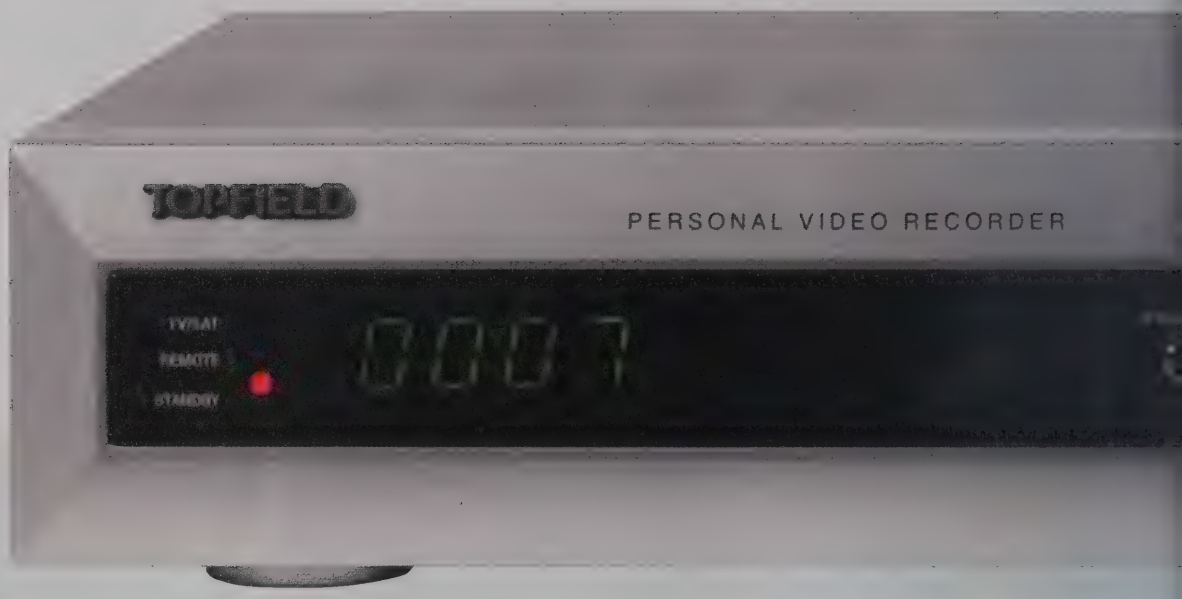


Topfield TF5000PVR

IT GIVES THE POWER OF SKY PLUS TO A MULTI-SATELLITE SYSTEM, AND ADDS A FEW NEW TOUCHES. GEOFF BAINS FINDS OUT IF THE TOPFIELD IS TOP IN ITS FIELD

Editor's CHOICE

Many believe that Sky Plus is the best PVR/receiver yet made. Its features and functionality make it extremely versatile and easy to use. However, Sky Plus is meant only for Sky Digital and is of no use to those who want to watch channels on other satellites. There are a number of receivers designed for non-Sky viewing with onboard hard disc drives, but they don't have the flexibility and functionality of the Sky Plus.

The Topfield TF5000PVR is the nearest thing to a Sky Plus for a multi-satellite system that we've seen so far – and possibly the nearest we will see for quite some time. It not only matches most of the Sky Plus functions, all adapted for multi-satellite use, but it even provides some that Sky hasn't implemented.

The TF5000PVR costs £500, but it provides one hell of a lot of functionality. This receiver is fairly unassuming for such a powerful machine – it's no bigger than most other digital receivers and is finished in sleek silver. The remote control looks better than many from the Far East.

There isn't a built-in conditional access module (CAM), but there are two common interface sockets behind a flap on the TF5000PVR's front panel for adding CAMs as required.

Around the back, there are two Scart sockets for connection to TVs and VCRs. Both can output composite video and the TV's Scart can use S-video and RGB signals for better quality pictures. Separate sockets provide additional S-video and composite video outputs, and there are stereo analogue audio outputs and a digital audio output (Dolby Digital-compatible).

There is the usual UHF aerial loopthrough (the output channel is tuned from the menus) that copes with all versions of PAL, and RS232 serial and USB sockets for connection to a PC. Unusually, the TF5000PVR's back panel contains four F-connectors.

The TF5000PVR's big advantage is that it has two satellite tuners on board. This means that, like the Sky Plus, it can record from one channel while you are watching another (or record from two different channels while you watch a third, previously recorded, programme). In fact, because the TF5000PVR is not primarily aimed at fixed dish systems (like Sky Digital) it offers even more flexibility than a Sky Plus.

The Sky Plus pattern can be used (aim a twin LNB at a single satellite and connect the two LNB's outputs to the TF5000PVR's tuners) which allows one programme to be watched while recording another. It's also possible to loopthrough one tuner input to the other to let a single-output LNB to receive two channels, although this is restricted to the simultaneous reception of channels in the same waveband and with the same polarity.

However, the TF5000PVR's LNB inputs do not have to be connected to LNBs aimed at the same satellite, or even to LNBs on the same dish. One input can be connected to a dish aimed at Astra2 and the other to a separate dish (or a LNB) aimed at Hot Bird, allowing a channel from one satellite to be recorded, while another channel from the other satellite is watched on the TV.

The TF5000PVR supports DiSEqC motorised mounts, so one of the LNB inputs can be connected to a motorised dish, allowing the receiver to receive and record from different satellites.

FLEXIBLE CONNECTIONS

Indeed, both LNB inputs could be connected to a twin LNB on the motorised dish, enabling you to watch and record different channels on any satellite. Or you could connect each LNB input up to different motorised dishes and watch a channel from any satellite and record another channel from a different, or the same, satellite.

Those with fixed dish systems have an amazing choice with several LNBs by using DiSEqC switches. Connect up one LNB input to the output a DiSEqC LNB switch, and connect the switch inputs to one output of a number of twin LNBs. Then you connect up the TF5000PVR's other LNB input to a second DiSEqC switch and to the second outputs from the same twin LNBs and you have system that will simultaneously record and display different channels from any of up to four satellites.

As if all this wasn't choice enough, the TF5000PVR goes that extra distance to give even more flexibility. When a tuner is busy providing a channel for recording, you can watch any other channel on that transponder at the same time, regardless of what the other tuner is connected to (since the one tuner is already receiving all the channels on that transponder).

If this sounds complex, it's because it is. But the TF5000PVR does most of the hard work – it knows when you can or cannot record another channel and only ever offers what it can deliver.

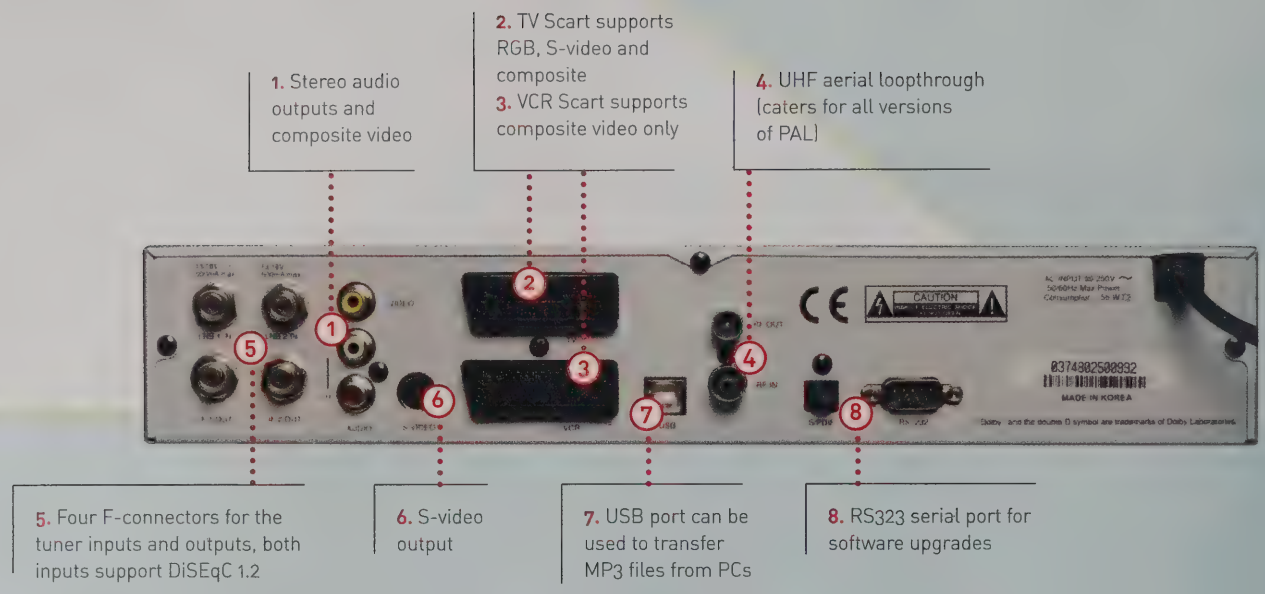
Like many other digital receivers, the TF5000PVR is supplied with a database of transponder tuning details (frequency, polarity and symbol rate) for a number of satellites. Once the dishes and LNBs in the system are aligned and connected to the receiver, it's a matter of searching through the appropriate transponders for all the channels broadcasting, and saving them for future access.

Once difference with the TF5000PVR is that there are two tuners so, depending on the antenna configuration, you may need to do different searches for each tuner. For satellites in common, the channels found for one tuner can be copied across to the other.

A channel search can look for just free-to-air channels, encrypted channels or both; search just one transponder (useful when, for example, you know that the channels using it have changed); or search a transponder with the video, audio and PCR PID defined first (useful for detecting specific channels).

In time, the channels using a particular transponder will change, and even the transponder tuning details can be

"Although the TF5000PVR is not cheap, it has a level of functionality that is not found in any other machine, whatever the price."


1. Stereo audio outputs and composite video
2. TV Scart supports RGB, S-video and composite
3. VCR Scart supports composite video only
4. UHF aerial loopthrough (caters for all versions of PAL)
5. Four F-connectors for the tuner inputs and outputs, both inputs support DiSEqC 1.2
6. S-video output
7. USB port can be used to transfer MP3 files from PCs
8. RS323 serial port for software upgrades

altered too. Although the TF5000PVR can search a transponder with new details, these cannot be saved to the database and have to be entered afresh each time you do a new search.

The idea is that the database is updated by Topfield and downloaded to your receiver, either over the air or by the internet (that's what the RS232 serial and USB interfaces are for), or by the user altering the database on a PC using a channel editor, provided by Topfield on the internet, and then download it to the receiver.

Either way, it means connecting up the receiver to a PC – not something everyone can do. The ability to change the basic database using the remote control would have been welcome.

However, once the channels stored in the receiver, the TF5000PVR makes finding the one you want very easy.

Channels are selected by number or from a list displayed onscreen, which displays the channels available to each or both tuners and switches to the relevant tuner when the channel is selected. If one or both tuners is recording a programme, only the channels available to view are displayed in the list (channels on the other tuner and on the same transponder as the channel being recorded).

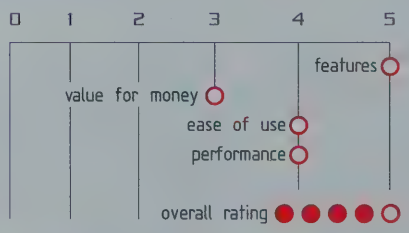
The channel list can be set to display the broadcaster (which can be useful on, say, Hot Bird where there are many channels, some of which are repeated several times) and the list can be reordered and sorted by provider, transponder frequency, satellite, encryption, or alphabetically. Individual channels can be renamed or skipped.

The TF5000PVR provides a staggering 30 favourite channel lists. Four are already named News, Sport, Movies and Music but those and the others can be named as required and filled with any channel selected from the main list.

Like most receivers, the TF5000PVR displays an information banner when a channel is selected that shows the channel's name, now-and-next programme details, and

FEATURES: DiSEqC 1.2 plus USALS, 5,000 channels, 57 satellites, 2x common interfaces, automatic FEC, symbol rate range 1000-45000, teletext, EPG, unlimited event timer, twin tuners, 80GB hard disc drive, recording editing, 2x Scart sockets, 2x LNB inputs, 2x LNB loopthroughs, composite video output, S-video output, stereo audio output, optical digital audio output

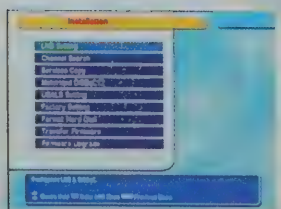
SUPPLIER: Turbosat
Address: Turbosat Concessionaires, Rival House, Staplehurst Road, Sittingbourne, Kent, ME10 1SY
Tel: 01795 429666
Website: www.turbosat.com



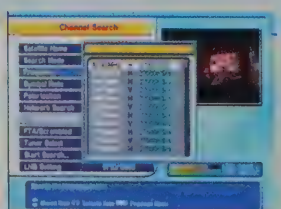
PRICE £479

PROS AND CONS

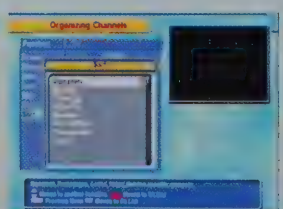
- ⊕ Flexible multi-satellite abilities
- ⊕ Able to cope with multiple fixed or motorised dishes of all types
- ⊕ The most powerful PVR functions yet seen in a satellite receiver
- ⊖ Transponder database can only be updated by the user using a connected PC
- ⊖ Playback of stopped recordings restarts from the beginning



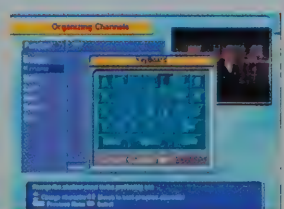
Tuners can be looped on one LNB or operated individually



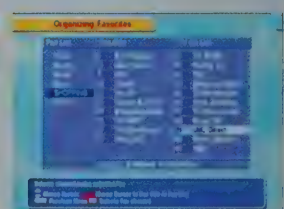
Channel search lets you scan for FTA or encrypted channels or individual transponders



Once located, channels can be sorted in myriad ways



An onscreen keyboard can be used to rename channels



Up to 30 favourites lists can be created and sorted to your satisfaction

details of the satellite, transponder, signal level, and teletext. The TF5000PVR decodes teletext (where broadcast) and reinserts it into the PAL signal for teletext TVs.

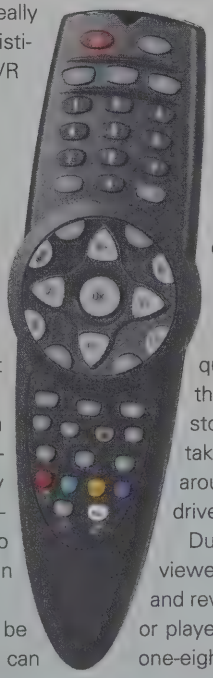
There's a full EPG screen too. In fact, there's two – the times and titles for the channel's next next six programmes, or four channels and a grid of programme titles, although this only seems to pick up on now-and-next information. Programme synopses are also available at the press of a button.

The TF5000PVR provides picture-in-picture (the PIP window can be varied in size and position) so you can watch both tuners at once, or keep an eye on a live broadcast while watching a recording. And there are three simple arcade games to play as well.

'Recordings are shown in the same quality as was broadcast, because it is the broadcast datastream that is stored on the hard drive'

PVR POWER

All this makes for a pretty sophisticated multi-satellite receiver, but what really makes the TF5000PVR is its sophisticated PVR abilities. The TF5000PVR can record TV programmes (two channels at once) when triggered with the Record button, a simple event timer or an event set from the EPG.



Provided the right CAM and card is fitted in a common interface slot, encrypted channels can be recorded and either unscrambled during recording or at playback.

The TF5000PVR will pause a live TV channel (somewhat confusingly called 'Time Shifting ' by Topfield) and you can rewind a programme at any time, and save it to the hard disc as though recorded in the normal way.

Satellite radio stations can also be recorded and MP3 files can be downloaded from a PC using the USB port, stored on the hard drive and the TF5000PVR used as an audio server.

A single button press displays the list of recorded shows. These are named according to the EPG programme or channel name, but they can be given a more recognisable name if required. The recordings can be reordered and sorted (by name, file size or time/date recorded), deleted, or locked against deletion. You can also play a sequence of any of the recordings, in any order.

Recordings are shown in the same quality as was broadcast, because it is the broadcast datastream that is stored on the hard drive. Recordings take up about 35MB per minute, giving around 40 hours recording on the 80GB drive.

During playback, recordings can be viewed at 2x, 4x, and 6x normal speeds and rewound at 1x, 2x or 3x normal, paused or played in slow motion (at half, quarter or one-eighth speed).

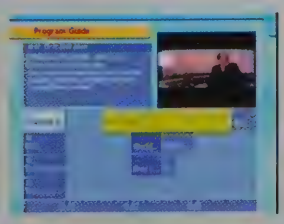
Pressing the Play button displays a bar chart that represents the recording's duration, and a marker that indicates the current position on the timeline. This marker can be moved along the timeline and playback will be continued from there. Unfortunately, once playback is stopped, it always restarts from the beginning.

The TF5000PVR's most advanced PVR features are for copying and editing recordings. During playback, a section of the recording can be copied to the hard drive or erased – great for removing adverts and bumpers before archiving a recording on tape.

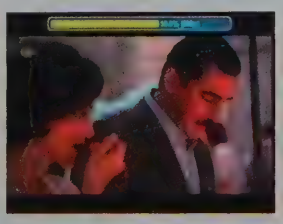
This is a powerful receiver. Even without the PVR functions, the twin tuners and versatile connections make this an excellent machine for anyone with an unusual or comprehensive antenna set-up. The hard drive recording, and editing and handling of recordings, provide a double helping of cream on the cake.

Although the TF5000PVR is not cheap, it has a level of functionality that is not found in any other machine, whatever the price. ■

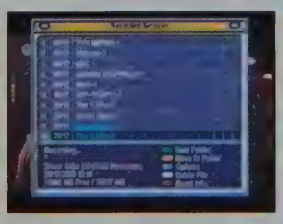
The programme info bar includes now-and-next info and a signal meter



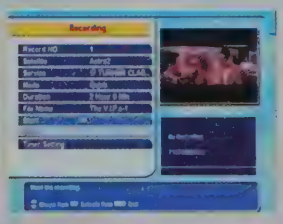
Two full screen EPGS are featured, but only now-and-next information is displayed



A progress bar lets you keep track of where you are when browsing recordings



Recordings are displayed in list form and can be sorted in a number of ways



Handily, recordings can be edited afterwards to remove ad breaks

Mondeal 7500-2VIA

IT'S FASTER THAN AN EASTENDERS STAR IN A SPORTS CAR, BUT DOES ITS SPEED MAKE THIS RECEIVER STAND OUT FROM THE CROWD?

There's often not a lot to tell one satellite receiver apart from the next. Most are designed and built in the Far East and shipped over to Europe to join the throng of competent, but indistinguishable, equipment. When it comes to the Mondeal 7500-2Viaccess 2CI, aside from the long and over-descriptive model name, this receiver has a remarkable speed to differentiate it.

For most folk, scanning a satellite to find all the broadcast channels is not something done all that often. However, if you are prone to scanning and rescanning satellites to keep on the very top of what's broadcast, then this receiver provides a big bonus – faster scanning than ever thought possible. Otherwise, it has to be said that the 7500 is not all that extraordinary.

The 7500 is a bit smaller than many receivers, but is not in any way miniaturised. It's Midi hi-fi sized and finished in trendy silver; a plasticky fascia hides a solid metal chassis and top cover.

The fascia has the (these days obligatory) menu control pad of keys and menu exit and power buttons. There's an acrylic window for the fluorescent numeric display, a trio of indicator lights and that's it – a triumph of understatement.

But it's a clever deception of the eye. In fact, the right-hand two-thirds of the front folds down to reveal another distinguishing feature of the 7500.

This receiver is equipped with two Viaccess card slots and two common interface slots (as implied by the full name). This is a little different: should you want to watch, say, both TPS and AB Sat on Hot Bird 13°E then you could do so (provided you had the correct viewing cards) and switch between channels from the two networks without having to get up and swap over the cards.

What's more, the common interface slots mean that you could also add more conditional access modules (CAMs) to gain access to yet more encrypted channels from other broadcasters (again, as long as you have the relevant viewing cards). Mondeal claims the 7500 will work with CAMs for Nagravision, Conax, Cryptoworks, Irdeto and Astoncrypt.

This means you could use the 7500 for viewing four different encrypted packages of channels (and all the free-to-air ones too, of course). As far as watching scrambled channels is concerned the 7500 has it sewn up as much as any receiver.

Around the back of the receiver the designers have been somewhat less generous with the features. There is only one LNB input on this receiver. It is equipped with DiSEqC control so you could easily extend that to two, three, or even four LNBs on one or more fixed dishes, but as a two-input tuner costs little more than a single input model, it seems a shame to require the user to fork out for the DiSEqC switch.

There is an LNB loopthrough output so this receiver could be connected to an analogue one to share the same LNB.

Better than that, the 7500 also supports DiSEqC 1.2, allowing it to use a motorised dish. It's only plain ordinary

CCESS 2CI

DiSEqC 1.2 – not the 1.2 Plus or USALS versions – so you have to search out satellites one by one (rather than just let the software work out the positions of them all from your latitude and longitude). However, this is only a one-off operation and even the automatic USALS version requires some manual tweaking to get the dish aim spot-on.

The 7500 has two Scart sockets to connect to a TV set and a VCR. Both Scarts output a composite video signal but neither can produce an S-video signal. However, the TV Scart can use an RGB signal (selectable in a setup menu). Indeed, there is no S-video output whatsoever on this receiver – a shame, as that is an easy way to improve the picture quality. There is a separate composite video output and a pair of stereo audio sockets, but no digital audio output.

This isn't an expensive receiver, but omitting these connections doesn't improve its case for standing out from the crowd.

Of course, the 7500 does have the usual UHF aerial loopthrough and the modulator is electronically tuneable over the full UHF range of channels 21-69, and it can be switched (from a setup menu) to output PAL I, B, G, D or K. However, any self-respecting user is going to connect up this receiver to a TV using the Scart socket and the UHF output will only be used for feeding other TVs, so little has been gained there.

The 7500 is controlled through a series of onscreen menus operated with the remote control handset. This is a nicely sculptured beast that shows a lot more design thought than many units to come out of Korea (as the 7500 does). However, there are a few anomalies – two OK keys, for example, and the shift of 3, 6, and 9 buttons down from the rest of the numeric keys can mean some mis-keying.

But these are quibbles; what makes or breaks a receiver isn't the remote but the facilities and the menus it controls. The 7500's menus are attractive (bright but not garish colours) and usefully consistent in operation – many of the menus, as well as a list of selectable items down the screen, feature further links along the bottom using the four colour-coded keys (individually labelled according to the context). It's a bit like the Fastext system.

However, there is not a great sense of order about what appears in which menu; finding the function that you want can be tricky at times. The Installation menu, for example, has selection items of: Antenna Setup, DiSEqC 1.2 Setup, Manual Scan, System Upgrade and Factory Reset; although the automatic scan is within Antenna Setup – where DiSEqC 1.2 should surely be – and System Upgrade should come under System Configuration one menu level up.

The first time the 7500 is used, various system features are set – the format of the connected TV, menu language, Scart video output, and so on. You can also set whether a clock display is constantly shown at the top-right of the screen (it is difficult to imagine that this would

'There's an acrylic window for the fluorescent numeric display, a trio of indicator lights and that's it - a triumph of understatement'

ever be desirable) and the transparency of the menu displays over a broadcast picture.

Then the antenna settings are made. The 7500 can be set up for a single fixed dish and LNB, up to four fixed LNBs or a DiSEqC 1.2 motorised dish. The LNBs can be universal, various dual and single-band Ku-band models, C-band, or with a local oscillator frequency set to any particular value a non-standard LNB may use.

A DiSEqC 1.2 motorised dish is configured by finding each satellite in turn, selecting a transponder that you know is broadcasting and moving along the arc, watching for a response from the onscreen signal meter. East and west limits can be set or disabled.

As satellites are found or the receiver is configured to access the right LNB, all the transponders can be scanned to find the channels broadcasting. The 7500 has a database of transponder frequencies, polarities and symbol rates along with the name of the broadcaster, to search for active channels. The FEC is found automatically and, as already stated, the 7500 carries out this usually tedious process incredibly fast. When it searched 65 transponders on Astra 1 at 19°E, it found 505 channels in 90 secs. This speed makes re-scanning a satellite (or even all the satellites – the 7500 can search for channels on one bird or all) so much more of a pleasure that you are likely to do it more often, and so keep your receiver's channel list more up to date.

The receiver can scan for only free-to-air, only encrypted channels or both, but this selection is in the System Configuration menu rather than in the scanning menu.

The transponder database is easily edited. Individual transponder entries in the database can be renamed and the parameters altered, or deleted or a new entry inserted. In this way, when a broadcaster stops, starts up, or simply changes its parameters, the database can be updated accordingly, and next time you do a scan the new parameters are used for the search.

'Unfortunately, when your channels are found, the 7500 is not so accommodating in presenting them for easy access'

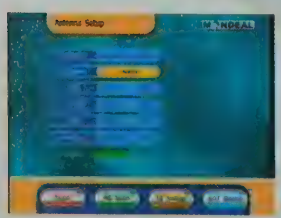
As well as scanning one or more whole satellites the 7500 will also scan just one transponder and you can enter the video and audio PIDs too if that is required to find a channel.

With an updateable database, automatic FEC, PID entry when required, and this turn of speed, the 7500 makes an excellent receiver for searching out the more obscure and fleeting transmissions. If only there was a full search facility, looking through all possible symbol rates and even frequencies (at a decent speed, if the scanning is anything to go by) then this would be a formidable feed-finder.

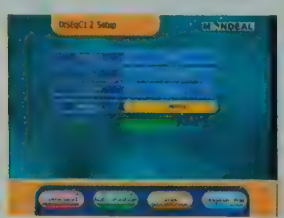
Unfortunately, when your channels are found, the 7500 is not so accommodating in presenting them for easy access. All the channels are stored in one huge list which, when displayed onscreen, gives no indication of whether the channel is encrypted or what satellite it's on – let alone the name of the network. The list can be sorted by satellite but that doesn't affect a channel's appearance in the list, just its position.

A small window display of the channel is shown on the channel list screen but if this is blank, it's unclear whether that's because the channel is encrypted or just not broadcasting. Again, the channel list can be sorted to show just free-to-air channels but that doesn't really get around the problem.

The channel list entries can be re-ordered manually and renamed, and there are four favourite channel lists into which any number of channels from the main list can be copied in a very simple procedure. However, the favourite lists cannot be renamed from their unhelpful FAV1 to FAV4 so the benefits of having the four lists is somewhat diminished. What's more, each time you elect to choose channels from a favourite list you have to go through the procedure of selecting which of the lists to use – just switching between the main list and the last-used favourite list would be preferable.

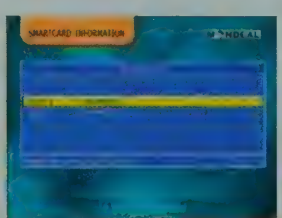


The Antenna setup menu lets you configure a wide range of LNB types



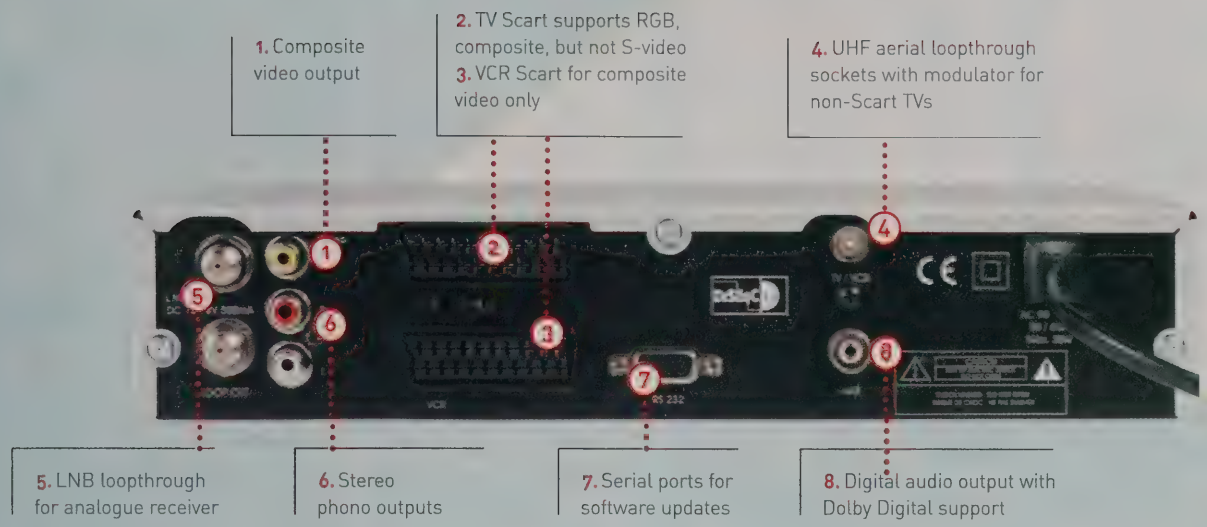
DiSEqC 1.2 setup involves finding each satellite in turn

The 7500 is arguably the fastest sat scanner we've seen



There are two Viaccess card slots and two CI slots onboard

The manual scan menu gives you a wide range of options


1. Composite video output
2. TV Scart supports RGB, composite, but not S-video
3. VCR Scart for composite video only
4. UHF aerial loopthrough sockets with modulator for non-Scart TVs
5. LNB loopthrough for analogue receiver
6. Stereo phono outputs
7. Serial ports for software updates
8. Digital audio output with Dolby Digital support

Radio stations are treated separately with their own list, but they can be incorporated into the favourite lists too.

When a channel is selected an excellent information banner is displayed, giving the channel name, number, antenna and transponder information, PIDs, signal strength and flags for encryption, audio format and teletext (which is both decoded for display by the receiver and reinserted in the video signal for decoding by a teletext-enabled TV). Again, this is good news for viewers of feeds and programme exchanges because it gives all the information they regularly require.

The 7500 also displays the EPG data (where broadcast) displaying three hours of programmes from four channels with the synopsis details of a selected show and an inset window of the selected channel.

For those channels that do produce seven-day listings (mainly the German channels in the ARD bouquet), the 7500 will display them.

Strangely, event timer has a one week limit on it as well. Not much use if you go on holiday for a fortnight.

Although this can unusually be set to switch on the receiver on a particular channel at a certain time, switch it on and then off again, or just switch it off (effectively a very complex Sleep timer), it can only be set up to a week in advance – not too useful if you are going on a fortnight's holiday.

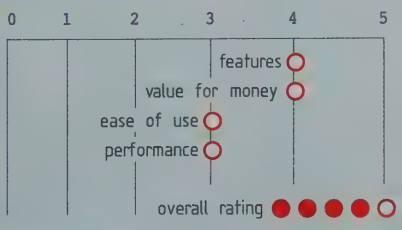
However, the quality of picture and sound from the 7500 is more respectable. The images are a touch grainy or noisy, but bright and with plenty of contrast. The sound, as far as the analogue audio outputs allow, is well up to standard.

At this price, there is little to really criticise the 7500 on. It does its job well; it can cope with plenty encrypted channels, although the channel lists are not all they could be, the video and audio outputs are disappointingly meagre and the menus are a little oddly arranged.

The ease with which the tuning database can be updated and the turn of speed it shows when scanning satellites makes this a good machine for anyone starting out down the road of satellite TV reception – as a hobby as well as just a means to fill the TV screen. ■

FEATURES: DiSEqC 1.2, 3,500 channels, 64 satellites, 2 x common interfaces, automatic FEC, symbol rate range 2000-45000, teletext, EPG, eight event one week timer, 2 x Scarts, one LNB input, LNB loopthrough, composite video output, stereo audio outputs

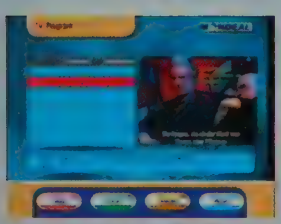
SUPPLIER: Mondeal Satellite Systems, 40 Warton Road, Stratford, London E15 2JU.
Tel: 020-555 1155
Website: www.mondeal-digital.co.uk



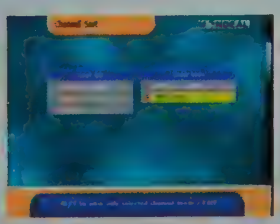
PRICE: £169

PROS AND CONS

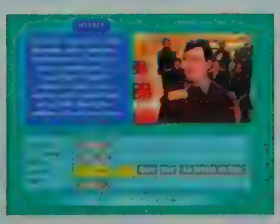
- ⊕ Cheap receiver with good support for encrypted channels, easy updating to accommodate transponder changes and an exceedingly fast channel scan
- ⊖ Finding the right channel among thousands is hard because of poor channel lists, and a confusing menu system makes installation more complex than it need be



Up to four Favourites lists can be created and parental locks implemented

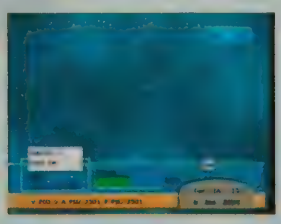


Channels can be saved into 'Free' and 'Coded' (encrypted) lists



Three-quarter screen EPG displays seven-day information, if available

A detailed programme info banner includes plenty of useful technical information



The radio info banner is just as detailed as its TV counterpart

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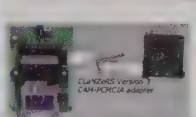

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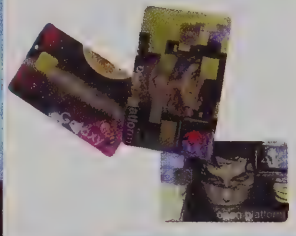

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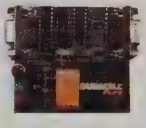

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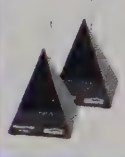

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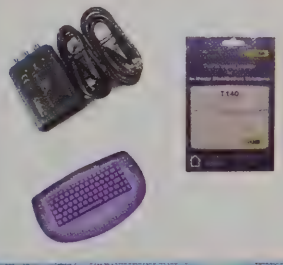

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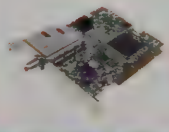

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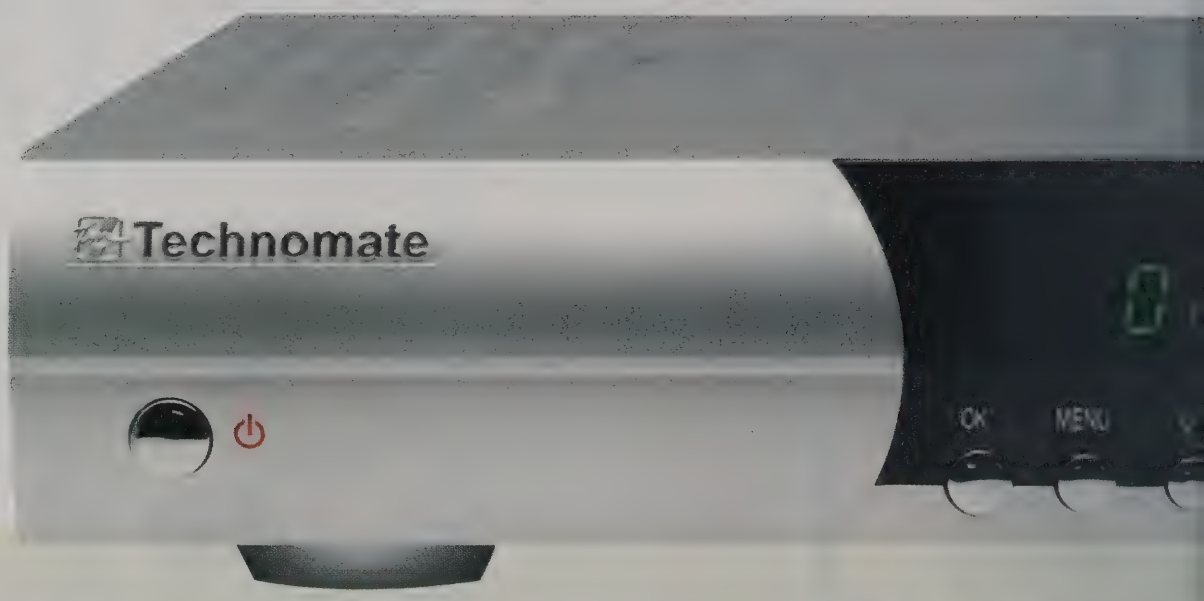
Email: sales@wizardsatellite.co.uk

For any items not listed please call



Technomate TM-55

AS ANOTHER BUDGET PRICED RECEIVER ARRIVES ON THE SCENE FROM TECHNOMATE, GEOFF BAINS FINDS OUT IF A CUT PRICE RECEIVER MEANS A CUTBACK IN FEATURES

Technomate has rapidly established something of a reputation for capable – and cheap – digital satellite receivers. The latest from this stable is the TM-5500CIplus. This is an upgrade from the previous TM-5500D and should prove popular among cash-strapped enthusiasts.

The TM-5500CIplus looks near enough identical to the half dozen other close cousins in the Technomate range. That is, by today's standards it is a fairly large machine – rather larger than is strictly necessary for the electronics inside – but the end result is a pleasing, if a little bland, looking receiver that will fit in among most other AV gear.

Most of the case is metal but the front panel is plastic, finished in silver, with a large acrylic window in the centre with a simple four-figure numeric seven-segment display and a row of chrome dome buttons beneath for front panel menu control.

On the righthand side is a fold-down flap concealing two PCMCIA slots for plug-in conditional access modules (CAMs) and a card slot. This is the biggest difference between this model and the previous TM-5500s – it is for more than just free-to-air. This has increased the price beyond the amazingly cheap, but it does expand the potential for the receiver enormously. Technomate says that these slots will be happy with CAMs for Viaccess, Irdeto, Astoncrypt/Seca, Mediaguard, Nagravision, Cryptoworks, Betacrypt, and Conax, so the vast majority of encrypted channels over Europe can be catered for by the TM-5500CIplus (with the appropriate CAM and viewing card).

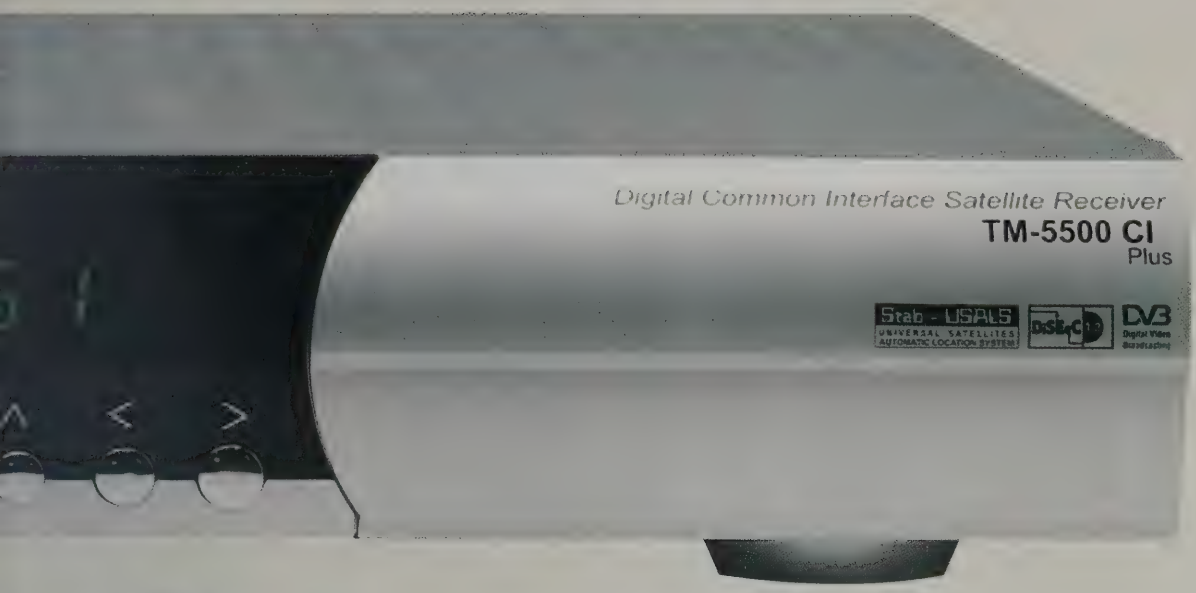
However, don't be tempted to try a viewing card in the front panel card slot. It's just an empty gash in the plastic through which you can easily lose your card! Plug-in CAMs have their own card slots.

The TM-5500CIplus's remote control handset is also sleek and silver, but it has little of the feel of solidity that the receiver itself displays. The handset is sculptured, with finger-grip ridges on the under side to help you keep hold while using it one-handed, and for the most part, the layout of the buttons shows thought for their function and use.

This handset is shared among many Technomate models and there are some strange anomalies. Although there are separate volume up/down and channel up/down buttons on each side of the four-way directional pad at the centre of the handset, in many circumstances the pad itself fulfils these functions – rather confusing.

The pad is too small and with little positive action, so it is easy (especially when working it one-handed) to press the wrong edge and end up in the wrong menu. Four separate buttons with the OK button in the centre would help here.

Nevertheless, the handset has several direct action keys that make life easier (even if their positioning clouds



ooCIplus

their operation). These cover teletext, EPG, picture adjustments, sleep timer, audio selection, and more. But, bizarrely, press the teletext button and you don't get a display of teletext; what you get is a single-item menu allowing you to select teletext!

Around the back of the TM-5500CIplus the panel of connections seems very sparse – although this is as much down to the large back panel as the number of sockets. The TM-5500CIplus has just one LNB input and this is looped through the machine for adding another receiver for, say, analogue reception.

Two Scart sockets are provided for connecting to a TV and VCR. Both provide a composite video signal and the TV Scart can also give an RGB signal for better picture quality on suitable TVs. There's also an S-video output for TVs that prefer this format, but this is only available on a separate connector. Sound is catered for by the usual stereo analogue audio outputs and an optical S/PDIF digital audio output. The TM-5500CIplus will receive and decode Dolby Digital signals from the few broadcasters that provide them. Of course, there's a UHF loopthrough too and the UHF channel can be set from the front panel with a single keypress – a really practical feature.

The TM-5500CIplus will connect to a wide variety of dish setups. It can, of course, be used with a straightforward single, fixed dish – but that would probably be a bit of a waste of its talents.

The single LNB input can be connected to two or more dishes (or two or more LNBs on the same multi-feed dish) using a DiSEqC switch. Up to four separate sources can be accommodated in this way but the TM-5500CIplus doesn't support the so-called mini-DiSEqC command format for selecting between just two LNBs – you'll need to uses a DiSEqC 1.0 switch at the dish.

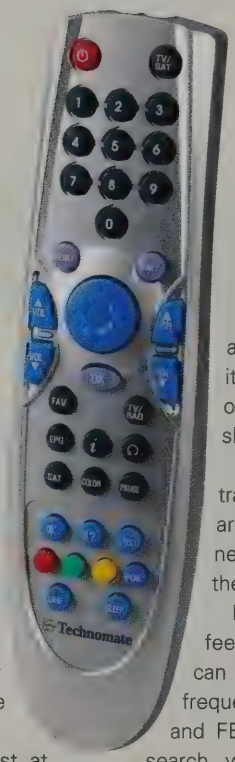
But the TM-5500CIplus does support a number of DiSEqC motorised mount configurations. You can hitch up a normal DiSEqC 1.2 mount or a USALS mount. With ordinary DiSEqC 1.2, you first choose the satellites that you want to access. The TM-5500CIplus has a menu of 88 birds (including 12 undefined ones for later additions) and you simply tick off the ones required. It's a good idea to start with just a few and add more to the list when all is well with those.

Now you use the DiSEqC 1.2 menu to set the dish limits (optional, but a good idea if your dish is close to a wall as this will stop it short of the full arc to prevent a collision) and go searching for the satellites in turn. You select a transponder you know is active and inch your way across the sky, watching the signal level and quality meter displays.

The menu also gives access to DiSEqC commands such as Save (to store the current position for a satellite), Goto (to return to a previously saved position), Goto Ref (re-centre the dish), and Recalculate (reposition the reference centre point).

Finding satellites by watching signal level displays is not easy and can be prone to mistakes when more than one satellite is using the same transponder details.

'Of course, there's a UHF loopthrough too and the UHF channel can be set from the front panel with a single keypress – a really practical feature.'



However, once the channels are tuned in you can access the DiSEqC positioner again while watching a channel onscreen, to check the position and change it.

If you select a USALS mount then it is a little easier as the software knows where to look for a satellite. You select the satellites required as before, and then enter your own position as a longitude and latitude (available on most decent atlases) and move the mount to its reference position. This is set for Hot Bird so the mount is then physically adjusted (the elevation set and the mount rotated on its pole – but the pole must be vertical) until Hot Bird is received loud and clear. Now the software can work out where all the other required satellites will be found.

Again, the calculated positions can be easily tweaked to perfection later.

The TM-5500CIplus can also cater for another class of mount movement – the up and down movement required for an inclined orbit satellite. Combined with a special DiSEqC actuator (costing about £75 and similar in appearance to a traditional 36V actuator, but controlled and powered by the LNB cable and DiSEqC commands) the Inclined Orbit menu allows you to set the degree of north/south offset much like a DiSEqC 1.2 mount is used to move across the arc.

Of course, inclined orbit satellites don't simply sit above or below the arc but move back and forth over many hours, so some kind of search facility – moving the dish up and down while automatically checking the signal level – would have been advantageous here.

Having set up the satellites required – from different LNBs, or from along, and above and below the arc – you can tune in the channels. The TM-5500CIplus comes complete with all its listed satellites populated with thousands of transponder details. A single satellite, or all the satellites already listed as required, can now be searched for active channels.

The TM-5500CIplus is pretty fast at this process and you can speed it up further by electing to limit the search to only free-to-air or only scrambled channels.

When the TM-5500CIplus's database of transponders goes out of date you can download a new one from Technomate's website (using a PC) or transfer the new list from another TM-5500CIplus (useful for dealers in the field).

Most usefully, you can also update the database yourself using the remote control. The parameters for individual transponders can be changed or new ones created and searched for active channels (with FEC and PIDs either defined or found automatically). A transponder that produces a successful search can then be saved to the database and other, old transponders deleted when no longer useful (to make room).

You can set up a new set of transponders for an entirely new satellite (useful for when a new bird is launched) and name it yourself (and by specifying the orbital position, a USALS mount should be able to find it, too).

Saved to the database, new transponders and new satellites are then automatically searched next time, along with all the others.

Enthusiasts keen to find news-feeds and temporary programmes can store the same transponder frequency with different symbol rates and FEC ratios, so that an automatic search will check all known uses of a transponders, finding whatever is broadcasting at that time.

All this can produce one heck of a lot of channels (the TM-5500CIplus will store up to about 5,000) so easily accessing the channel you want to watch is a key factor in the usability of this machine.

The channels are numbered and so you can simply select the channel you want by number, and for the most frequently watched channels, this may well be what you do. However, there is an onscreen list that shows all the channels, or just those on any particular satellite.

The only problem with this is that, if you do rely on channel number to select your most-watched channels, this number changes with the way in which the list was last configured. So, it's probably best to rely on the list for all access.

The list can also be displayed in alphabetical or transponder order, with just the FTA channels, just scrambled channels, or both (with FTA first or scrambled first). Channels can also be moved around the list, deleted, renamed or even the PIDs changed.

The onscreen list displays the selected channel in a small window and a press of the

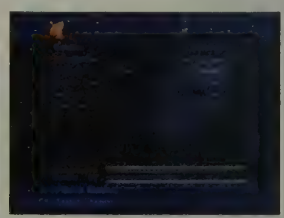
'Saved to the database, new transponders and new satellites are then automatically searched next time, along with all the others.'

The icon-led menus can be confusing at times

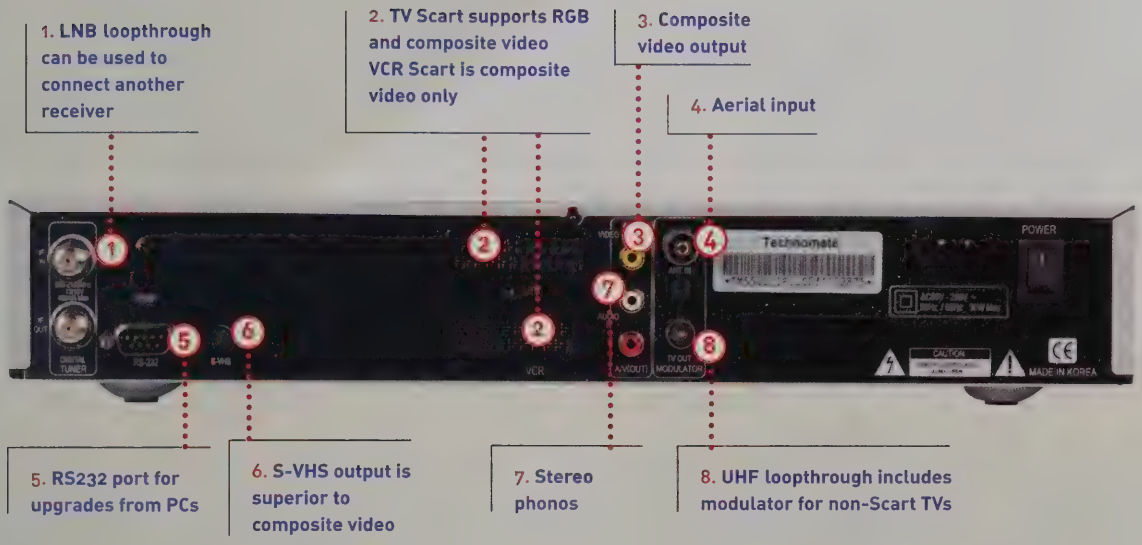
Configuration options include support for both DiSEqC and USALS mounts

Using the signal meter to locate satellites can be tricky initially for DiSEqC users

If you get 'stuck' the receiver's settings can be fully restored to factory defaults



Comprehensive search options include the ability to edit transponder information


1. LNB loopthrough can be used to connect another receiver
2. TV Scart supports RGB and composite video VCR Scart is composite video only
3. Composite video output
4. Aerial input
5. RS232 port for upgrades from PCs
6. S-VHS output is superior to composite video
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OK button zooms this (rather dramatically and pleasantly) to fill the screen for viewing.

As well as the main list the TM-5500CIplus also has eight favourite channel lists, unfortunately preset to the themes of Movies, News, Sports, Music, Children, Drama, Family and Miscellaneous.

Selecting a channel displays an information banner giving its number, name, audio information, signal strength and the time. Successive presses of the i button displays alternative banners that give satellite and transponder data, and now-and-next programme information (where broadcast).

The EPG information can also be displayed with the EPG key, which screens a list of eight channels with their current programmes and further presses of the coloured keys selects the next programme, detailed synopsis or a complete schedule for any day in the next seven (in the few cases such information is broadcast).

Surprisingly, the TM-5500CIplus does not have any kind of event timer (driven from the EPG or set manually). Only simple on-after-an-interval and sleep timers are provided.

However, the pictures and sound produced from this receiver belie its price. Images are reasonable from all channels and the tuner seems sufficiently sensitive to get reliable data from quite weak signals. The picture can be adjusted (brightness, contrast and colour) or set at preset levels for films, news, and sports.

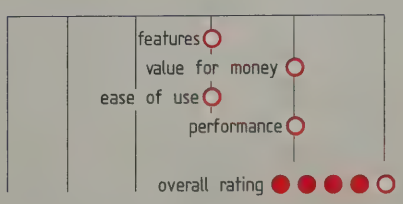
Sound quality, especially from the digital output is also excellent at this price and the TM-5500CIplus performs well as a multi-satellite digital radio receiver.

In fact, the only real downside to the TM-5500CIplus is the confusing nature of most of the installation menus and onscreen channel lists (not helped by the equally strangely-ordered manual).

This may dismay more casual users but it won't put off the enthusiast. Once the menu system is mastered, the TM-5500CIplus provides an excellent means to multi-satellite reception for a very reasonable price. ■

FEATURES: DiSEqC 1.2 USALS, 5,000 channels, 130 satellites, 2x common interface, automatic FEC, symbol rate range 2000-45000, EPG, teletext, 2x Scart, LNB input, LNB loopthrough, composite video output, S-video output, stereo audio output, optical digital audio output

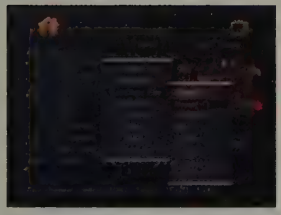
SUPPLIER: Technomate UK, 328 Hoe Street, London E17 9PX
TEL: 020-8509 2440
WESBITE: www.technomate.com



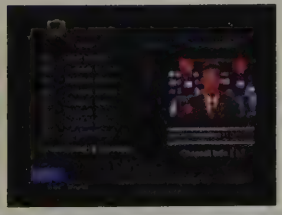
PRICE: £189

PROS AND CONS

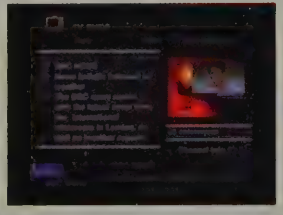
- ⊕ Fairly cheap receiver with full DiSEqC and USALS capabilities, easily updated for broadcasting changes
- ⊖ No proper event timer, complex and confusing menus and channel lists



Eight favourites lists can be created under pre-set headings like Movies and Sport



The three-quarter screen EPG displays up to eight channels at a time



Both now-and-next and seven day programme info can be accessed where broadcast

The info bar displays programme info and audio and signal details

The info bar can also be toggled to view satellite transmission data

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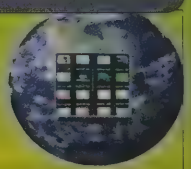

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Jackass: The Movie on Sky Box Office. Picture courtesy of BSkyB

Free spirits

THERE ARE A VAST AMOUNT OF FREE CHANNELS AVAILABLE BY SATELLITE – ALL YOU NEED IS A DISH AND THE RIGHT RECEIVER. HERE ARE FOUR FREE-TO-AIR RECEIVERS TO CONSIDER

Most people are introduced to satellite television through Sky's subscription-only packages, but this is only a small part of the television channels available with a dish. Dozens of free-to-air (or FTA) channels can be picked up by anyone with a satellite dish (preferably at least 60cm across) and a suitable receiver.

There are a large number of FTA channels available on the most popular satellites, which include Hot Bird at 13°E. In addition more exotic and unusual feeds (such as raw news feeds from outside broadcast units) can be picked up and watched with a suitably-sized dish. For the low down on becoming a feed-hunter see our feature on page 18.

The channels that can be received using the free-to-air receiver system partly depends on the receiver's symbol rate. Basically, the wider the symbol rate the receiver can detect, the more channels it is able to receive.

All of the receivers here feature DiSEqC 1.2 for easy control over motorised dishes. The Technomate is also equipped with USALS, allowing it to automatically align an antenna to different satellites.

The Triax DVB 260S gives a good performance, for the money, even if it does lack USALS, which is a slight disappointment.

The Samsung DSR9400 is a smart-looking compact effort and comes with a comprehensive range of alignment options.

The ID Digital F-20E is based on Humax's FTA receivers. Though the hardware spec has been upgraded, the interface is still recognisably Humax. The fairly narrow range of symbol rates means it won't find more obscure feeds.

The Technomate TM-5500D is a remarkably well-featured receiver for just under £100. It is user-friendly and powerful, making it ideal for newcomers and enthusiasts.

If you like what you find, or European pay-TV starts to appeal, the next stage is to upgrade to a receiver with common interface slots for inserting the required viewing card and CAM.

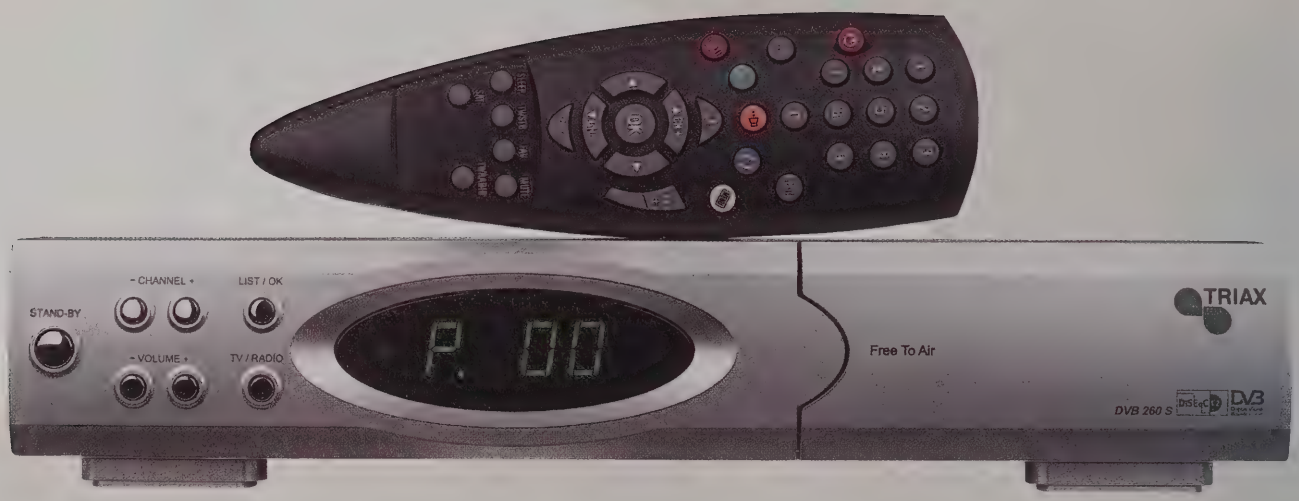
FREE TO CHOOSE

Triax DVB 260S	£130
Technomate TM-5500D	£99
Samsung DSR9400	£129
ID Digital F-20E	£139

BUYING TIPS

Helpful hints when buying a free-to-air digital receiver

- **Those new to the world of satellite should consider getting a receiver that's equipped with a common interface slot for adding CAMs and a viewing card. These are able to pick up European pay-TV which can only be accessed using a subscription card and a CAM.**
- **A receiver with a digital audio output will give superior audio quality when connected to a hi-fi system. Some free-to-air German channels broadcast programmes in Dolby Digital 5.1. If your chosen receiver doesn't have a Dolby decoder for this, you can connect the digital output to a Dolby-equipped speaker system.**
- **The more channels you have, the more likely you are to want to record something. Ensure that your chosen receiver has more than one Scart so you can connect a VCR to it.**



Triax DVB 260S

Triax's DVB 260S is one of the first receivers from the Dutch company to support DiSEqC 1.2. The 260S is pre-programmed with the locations of Astra 1, Hot Bird and Intelsat 707, but a full channel search is needed to get a full list of the available channels.

Fixed dish users get a table which allows them to set switches and LNB types for up to 50 satellites (although only 16 LNBs can be configured using DiSEqC or 12V switching without resorting to an external device) and there is a signal strength and quality meter for fine-tuning. Ku-band and C-band LNBS, tone burst, 22kHz switches and scrambled channel search are supported.

Motorised dish uses will welcome the 206S's user-friendly DiSEqC setup and positioning interface, although USALS and movement limits are not supported. However, there are signal strength and quality meters and up to 59 positions can be saved.

There are three channel search options: automatic, network and manual. The automatic mode uses the receiver's list of transponders to search for channels.

If a fixed dish is used the receiver can check several satellites at once, but motorised dish users will have to move their antenna manually and can only scan one bird at a time. Network search uses the satellite's broadcast transponders to update the receiver's lists, but this doesn't work on all satellites.

'The picture quality is impressive – even when receiving channels using high compression'

The automatic and network search modes were quite fast (five minutes to search through Hot Bird's Ku-band) and the wide symbol range (1000-45000) pulled in nearly every available signal.

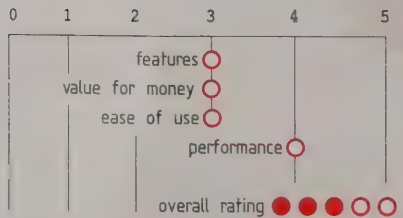
In manual mode the receiver searches tables of transponders and allows the users to edit PIDs and FECs, or to add new transponders. Motorised users use the manual search mode to search the test transponder, so adding a new transponder means alternating between fixed and motorised settings.

The 2,000-channel memory is a bit small, but sufficient for most users. Channels can be stored in four favourite lists, or in 16 pre-titled categories. There is a standard DVB EPG which supports now-and-next and weekly listings.

The picture quality is impressive – even when receiving channels using high compression, including many on Hispasat. The 260S automatically applies letterboxes to widescreen transmissions on 4:3 sets, and pillar boxes on 4:3 images shown on widescreen displays.

Although not stunning, the audio output is free of extra noise, and delivers excellent results in some cases.

Overall, the DVB 260S is a very good performer, even if the absence of USALS is rather disappointing.



FEATURES: LNB input, LNB loopthrough, DiSEqC 1.2, 2,000 channels, 59 satellites, selectable FEC, symbol rate range: 1000-45000, teletext, 100 minute sleep timer, UHF modulator channels 21-69, PC software upgrade, 2x Scart, composite video, stereo audio phonos

SUPPLIER: Triax UK, Abergorki Industrial Estate, Treorchy CF42 6DL. Tel: 01443 778908. Website: www.triax.com

PRICE £130

PROS AND CONS

- ⊕ Simple to use, good performance
- ⊖ No USALS, no RGB output

ID Digital F-20E

The F-20E is based on Humax's range of receivers, but features a new chipset, more memory, more compact case, and a streamlined but functional set of connections (although there is no modulated UHF output) than the models it is based on.

Despite the number of changes in hardware terms the F-20E sports Humax-style menus, which can be confusing to the layman, notably the use of the engineer-minded term 'Service' instead of 'Channel'.

Switching on the F-20E is also a little confusing. After you are prompted to set up your LNB, pressing OK brings you to the Manual Search menu rather than the expected Automatic Search option. Quitting this to access other menus involves starting a manual search and then interrupting it.

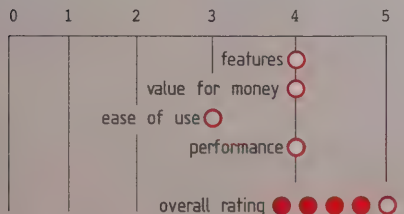
The F-20E is able to receive signals from up to 32 Ku-band, C-band or universal LNBs on a fixed dish system selected by DiSEqC and tone burst switching. Setting up a motorised system is more complex. The motor control menu is hard to find without referring to the manual (there are no onscreen prompts on how to find or use it) and ID has kept Humax's pointless User and Installation modes, so setting up a motor control system means having to flip between the two to access certain motor commands. However, a full range of DiSEqC 1.2 commands is available, although these feel like they have been designed for a fixed dish receiver rather than being programmed in from the beginning.

'The F-20E has a high level of functionality and good picture and sound quality'

There are two automatic channel search options – Quick and Detailed. Quick mode uses a preset list of frequencies and symbol rates, and it only took five minutes to search all Hot Bird channels. The Detailed search is far slower, but it searches for Ku-band and C-band frequencies using symbol rates set by the user. The fairly narrow range of symbol rates mean that unusual feeds with rates in the low thousands will be missed, but most available FTA channels will be picked up. Channels collected by the searches can be listed alphabetically, by satellite, placed in five favourite or 16 genre lists and locked using a PIN. Channels can be moved between lists, renamed and deleted. A downside is that this receiver won't automatically scan for new transponders, so a manual scan or a software update is needed.

A DVB EPG is available, and up to 20 programmes can be reserved from the EPG using a timer (there are daily and weekly options) if the channel supports this. There's also a four-channel now-and-next EPG that can be laid over the picture, and teletext is supported. Images are crisp and clear, with rich colours, and audio was good on most channels with low noise.

The F-20E has good functionality; it's just a shame that the menu system is not so accessible to newcomers.



FEATURES: LNB inputs, LNB loopthrough, DiSEqC 1.2, 4,000 channels, 32 satellites, selectable FEC, symbol rate range: 2000-31000, teletext, DVN EPG support, 20 event one week timer, UHF modulator, RS232 port, software upgrade: OTA/PC, 2x Scart, stereo audio phonos

SUPPLIER: Turbosat, Turbo House, 609-613 Holloway Road, London N19 4DJ. Tel: 08707 588885. Website: www.turbosat.com

PRICE £139

PROS AND CONS

- ⊕ Good performance, plenty of features
- ⊖ Motor menus are confusing

Technomate TM-5500D

Replacing the popular TM-5000D FTA receiver, the TM-5500D sports some welcome additions to the previous blueprint while still selling for £99.

Ease of use is once again the byword. Menus are simply designed, using a mix of icons and text, and there are few complicated sub-menus.

The TM-5500D also comes pre-tuned out of the box with 3,500 channels and 130 satellites. Bearing in mind how often channels can come and go, some of this database will be incorrect, but it does avoid the need to carry out a search right away.

There are three search modes available, plus a Link Search facility that checks a series of satellites for channels with a switched or motorised dish.

The Satellite Setup mode lets the user select from 63 birds (12 more can be added) and set LNB and DiSEqC switching options. Satellites can be renamed, positions changed, and Ku-band and C-band LNBs configured. Up to four fixed LNBs can be controlled using DiSEqC 1.0, or two with the less advanced mini-DiSEqC.

The quick and thorough Auto Search facility includes DiSEqC 1.2 and USALS support. The USALS control can automatically find satellites after the antenna is manually aligned to Hot Bird and the user's longitude and latitude is set. Movement limits have been omitted from the USALS control, but they can be set in the DiSEqC setup.

'The TM-5500D is a powerful and very competitively priced receiver'

The Auto Search mode checks for FTA and/or scrambled signals and can use a satellite's network information table to find new transponders, and access the Link Search mode. An advanced search mode allows the user to add individual channels and transponders. The same frequency can be saved in multiple slots, with different symbol rates, polarisation settings and FEC values.

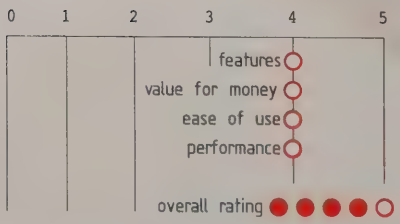
A symbol rate of 1000-45000 means this receiver will tune into nearly everything.

There is memory enough for 5,000 channels held in eight favourite lists. Channels can be moved, renamed, have parental locks applied, deleted or their PIDs edited. Selected channels are displayed as a thumbnail in the channel organisation screens and the full-screen EPG display shows now-and-next for eight channels or a full day for the selected channel.

The receiver is capable of storing up to seven days of data (from the channels which broadcast it) and the channel information bar contains the channel's name, number, audio options and signal strength and quality displays. There is no event timer.

There is a S-video output and a Scart connection that uses composite video or a slightly superior RGB signal. Pictures are as good as MPEG-2 compression allows. Audio was satisfying but, again, dependent on the channel. Digital audio was slightly better than analogue, and Dolby Digital is supported.

The TM-5500D is a feature-packed and competitively priced receiver. It's friendly enough for newcomers yet has much to interest enthusiasts too.



FEATURES: LNB input, LNB loopthrough, DiSEqC 1.2 USALS, 5,000 channels, 130 satellites, selectable FEC, symbol rate range: 1000-45000, teletext (VBI reinserted), DVB EPG, UHF modulator 21-69, RS232 port, PC software upgrade, 2x Scart, S-video, composite video, stereo audio, optical digital audio output
SUPPLIER: Technomate, 328 Hoe Street, London E17 9PX.
Tel: 020 8509 2440. Website: www.technomate.com

Editor's CHOICE

PRICE £99

PROS AND CONS

- ⊕ Fully featured USALS receiver, competitive price
- ⊖ User manual needs improvement

Samsung DSR9400

The DSR9400 tested had two Scarts (RGB for TVs and composite video for VCRs) and a digital audio output. No loopthrough, UHF, analogue stereo audio or a composite video outputs; although there is another version available with these and one Scart.

Fixed dish users have a choice of 2-level or 4-level DiSEqC switching and 22KHz tone. Motorised dish users can access a Positioner Setting menu that can be used to set the transponders, signal levels, frequencies, symbol rates, FEC and polarities to use when searching for channels.

The Installer and User modes have been simplified from those on earlier models. The Installer mode accesses advanced functions like movement limits and resetting the positioner, and the User mode has a signal meter, movement options, and can load pre-saved satellite position or calculate a bird's position.

Motorised dishes can be moved continuously, for one to 127 secs, in small steps or in large 'pulses'. However, the LNB in's power is limited to 350mA, meaning larger dishes are slow to position. There is also support for vertical alignment, even though no DiSEqC mounts or interfaces don't support this yet.

'The DSR-9400 is a great price and has everything you need for watching FTA TV'

The DSR9400 is pre-loaded with 32 satellites and has three open slots for new birds. There is support for Solarsat dish alignment, allowing dishes to be aligned by postcode or location. The channel scanning functions available include checking one satellite, a batch of birds, for all channels or just FTA. All of these searches were remarkably quick. The manual scan allows symbol rate and FEC to be selected, and searches can be carried out for a specified network ID or PID to find an individual channel.

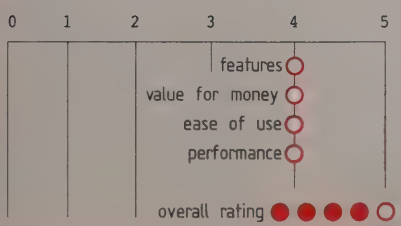
The channels list has options for renaming and rearranging lists, nine Favourite lists, and deleting satellites, transponders and channels. The current channel is shown as a quarter-screen display. Lists can be sorted alphabetically by provider or transponder. Channels can be locked with a PIN, alternative audio options can be selected, and teletext is available through a software browser or VBI reinsertion, but the list doesn't show which satellite is in use.

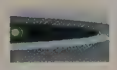
The EPG has a quarter-screen display of the current channel and a banner with signal strength, time, teletext and EPG data. The EPG also shows the encryption in use, and detailed information on programmes and tuning details is available. There is one event timer; it has repeat options, but it still is only one. The clear and logical menu is very fast – there is little delay when changing channels or accessing commands.

The AV performance is good, with sharp pictures, no grain or artefacts and rich colours – there were no problems with heavily encrypted or compressed feeds. Sound from the digital output was great, despite the lack of Dolby Digital support.

Samsung has balanced affordability and functionality. The DSR9400 is a great price and has everything you need for watching FTA TV.

However, it is worth considering that an extra £20 will get you the DSR9600 PVR receiver.





FEATURES: LNB input, DiSEqC 1.2, 4,000 channels, 32 satellites, selectable FEC, symbol rate range: 2000-45000, teletext (VBI reinserted and built-in), DVB EPG, 2x Scart, optical digital audio output

SUPPLIER: Turbosat, Turbo House, 609-603 Holloway Road, London, N19 4DJ. Tel: 08707 588885

Website: www.turbosat.co.uk

PRICE £129

PROS AND CONS

- ⊕ Fully featured USALS receiver, competitive price
- ⊖ User manual needs improvement

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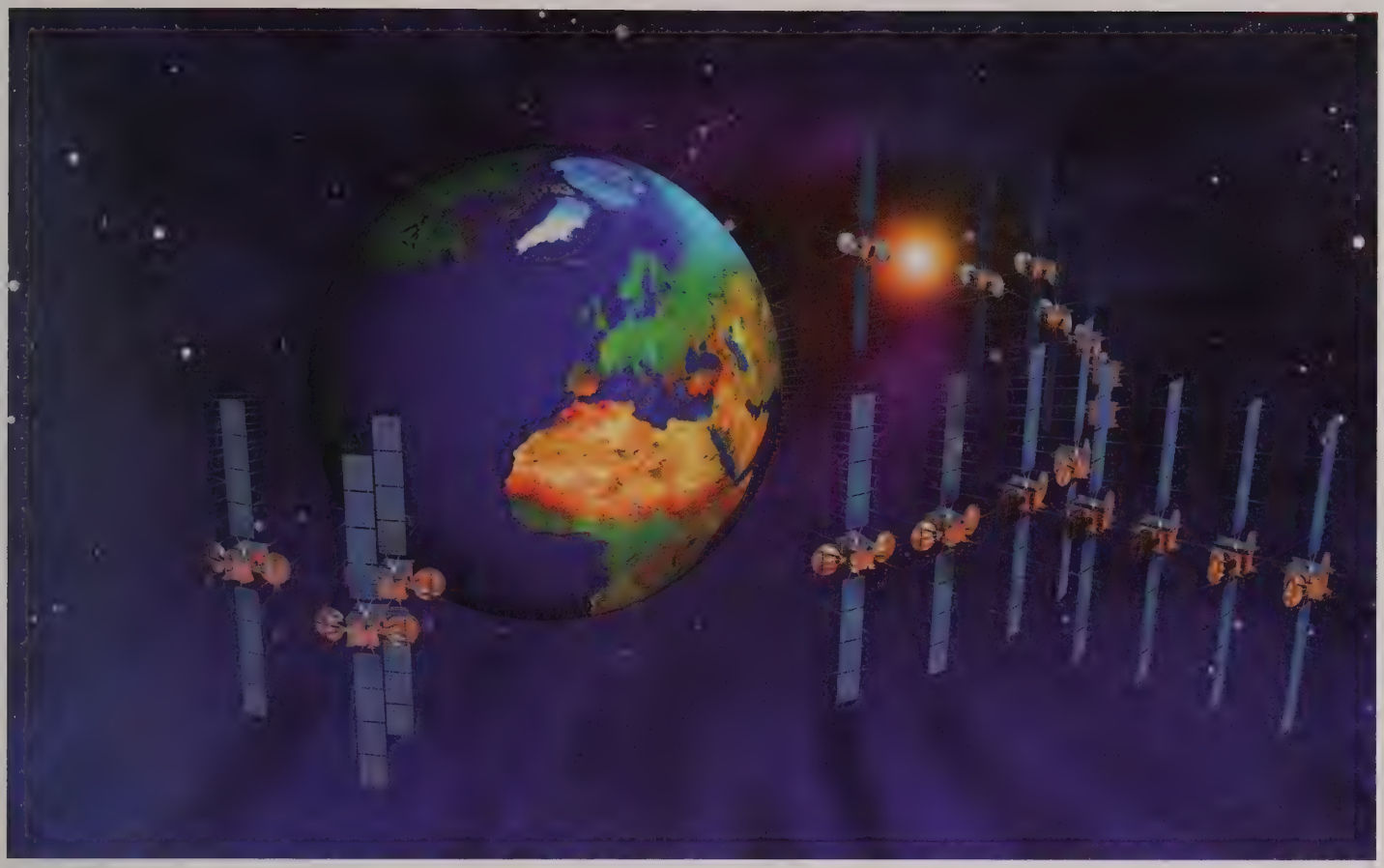


Motor Heads

A MOTORISED DISH IS ESSENTIAL TO GET THE MOST FROM YOUR SATELLITE TV SYSTEM

Last issue's Satellite Basics covered how to install multiple LNBs onto a fixed dish system to increase the number of feeds your system can pick up, but perhaps the best way to maximise the number of channels available to you is to install a motorised dish system.

Communication satellites are placed in geostationary orbits around the Earth along the Clarke Belt (also called the Arc) so they maintain the same position over the equator, making them appear to be stationary.

From the UK the Clarke Belt appears to be an arc, starting 40° to the east and west edges of south, on the horizon, rising to a peak in the south. It's possible to pick up signals from any satellite along the Arc, but a motorised dish allows the antenna to track along the Belt and pick up signals from many satellites.

A motorised dish system is able to track along sections of the Arc (this is limited to 60° due to the horizon; dishes on very high vantage points can see more) and collect signals from satellites as far apart as Astra 2 and Hispasat.

The signals from most communication satellites are focussed into a small area – called a footprint – rather than spread out over an entire hemisphere. This allows the intended audiences of the channels to pick up the signal using smaller dishes, and satellites can share the limited number of frequencies available. For example, the signals from Astra 2D grow very weak outside of the UK, while broadcasts from some of Hot Bird's transponders can be picked up from North Africa to the Ukraine using a 60cm dish.

Also, as the atmosphere absorbs a large amount of a satellite's signal, it is difficult to get a signal from satellites further than 40° west and east of the antenna's position. Tall buildings and trees can further restrict the antenna's field of view.

The angle of view available to the dish and satellites' footprints will effect the size of the dish you need to pick up foreign channels, if you will be to pick up any at all. ■

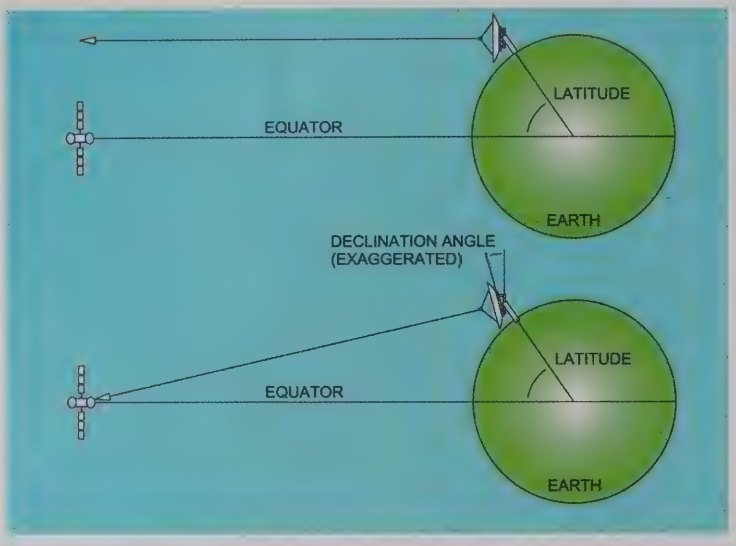
'A motorised dish allows the antenna to track along the Belt and pick up signals from many satellites.'

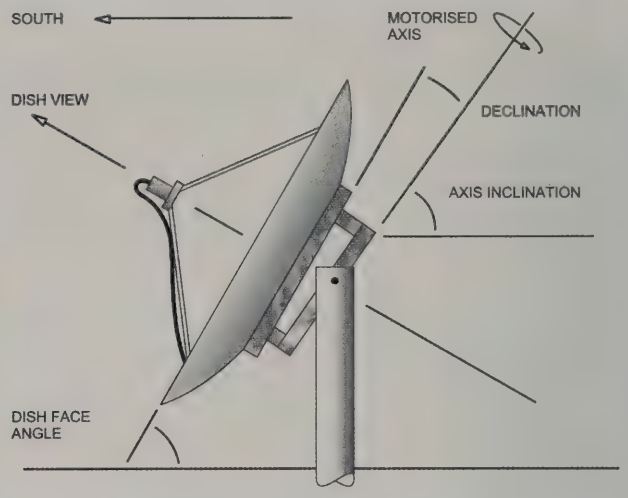
Polar and H-H

There are two main types of motorised mounts: polar and horizon-to-horizon.

In a polar mount the axis is tilted so the dish roughly follows the Clarke Belt. Then the dish is tilted to a declination angle to track the Arc almost perfectly (it only moves away at the extreme ends of the Arc). A jack-type motor (basically a powered screw-thread) moves the dish along its arc.

Installing a polar mount system is a much more complicated operation than putting a fixed dish system, and will be covered in more detail later in this series.





The main advantage to a polar mount system is the jacks, mounts and motors are robust, so they will not be damaged by high winds and are powerful enough to drive large dishes.

In a horizon-to-horizon system (also called H-H) the dish's motor is in the axis, and uses the declination to follow the Arc. These motors usually allow 180° of movement, hence their name.

An H-H dish is easier to install than a polar system, but the compact motors are not powerful enough to drive a large dish quickly (if at all) and can be damaged by high winds.

DiSEqC 1.2 mounts

The DiSEqC system was designed by Eutelsat to simplify LNB switching and dish motorisation, in order to encourage people to use the company's many satellites.

The motor is controlled using 22kHz signals sent along the LNB cable, which also carries a 500mA current to power the motor. DiSEqC systems also include movement limits, to prevent the dish from being damaged by banging into obstacles.

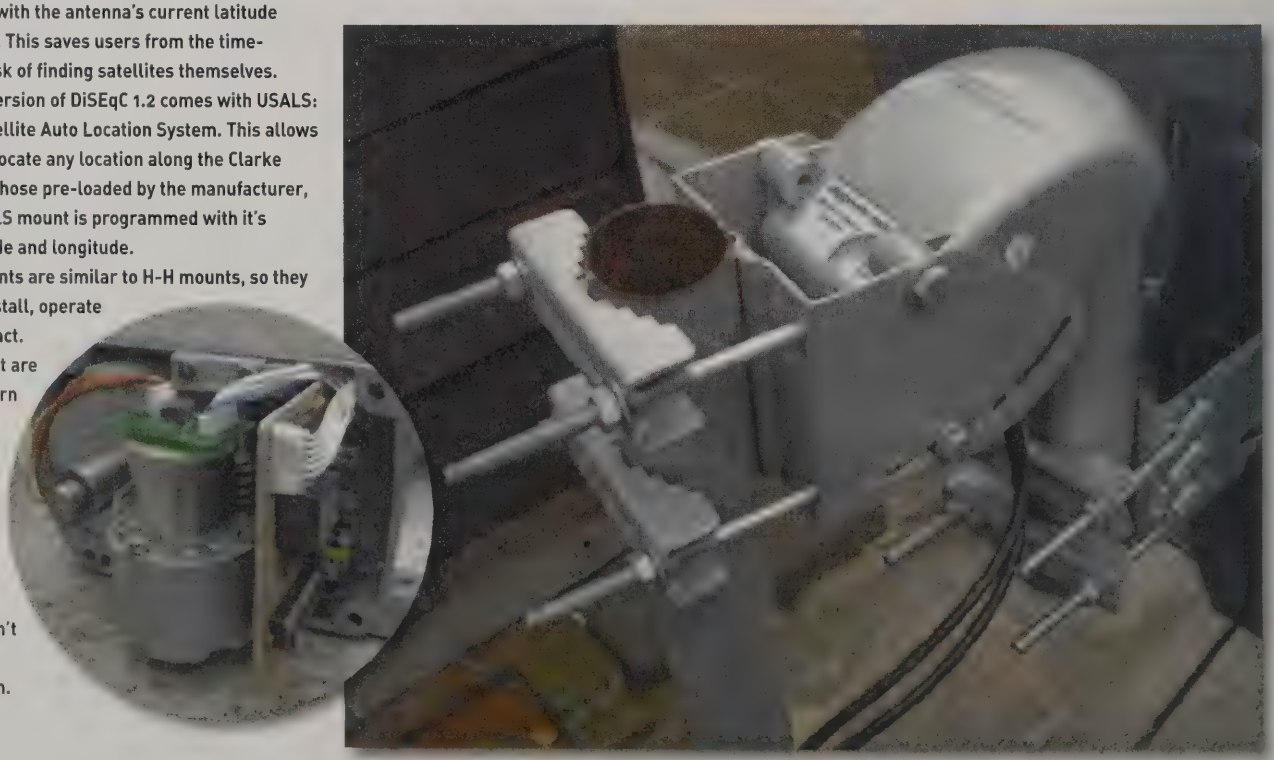
DiSEqC 1.2 has been designed as a 'smart' system. It comes pre-loaded with the positions for commonly-used satellites in the Clarke Belt. This means it can calculate where these birds are, once the dish is aimed at a reference satellite and the system is programmed with the antenna's current latitude and longitude. This saves users from the time-consuming task of finding satellites themselves.

The latest version of DiSEqC 1.2 comes with USALS: Universal Satellite Auto Location System. This allows the mount to locate any location along the Clarke Belt, not just those pre-loaded by the manufacturer, once the USALS mount is programmed with it's current latitude and longitude.

DiSEqC mounts are similar to H-H mounts, so they are easy to install, operate and are compact. However, most are only able to turn through 45° and their 500mA power supply means they are slow to move 80cm dishes and can't drive dishes larger than 1m.

PROS AND CONS

- ⊕ Easy to install and operate, compact, smart
- ⊖ Limited dish size and range of motion



36V Motorised systems

Older satellite systems and those using very large dishes (1.2m or larger) are powered by a 36V, 5A motor – either a polar or H-H type. This allows the large dish to be moved quickly, but these powerful motors are noisy.

Traditional 36V kits include a motor to move the dish and detectors that check how far the dish has travelled. A specialised cable contains two wires that carry power to the motor, two that carry sensor pulses to the receiver and an LNB cable.

As with DiESqC 1.2 systems, 36V motors are also fitted with movement limits to prevent the dish being damaged while it turns by banging into obstacles. The receiver's software should also have movement limits built in for added protection.

The biggest downside of these systems is that they are 'dumb', so all the calculations needed to find new satellites have to be done using the receiver or by the user.

Most modern 36V receivers are fitted with auto location software that simplifies this. These systems either use three reference points (normally the extreme east and west and centre of the dish's field of view) to determine what the dish can pick, or simply scans the sky to find transponders stored on its database.

PROS AND CONS

- ⊕ Able to use very large dishes, fast movement
- ⊖ Noisy and complcated to install

Satellite viewers with DiSEqC receivers can take advantage of the power of a traditional 36V system using a DiSEqC interface. This turns the DiSEqC LNB's control pulses into power and sensor data that can control the dish's motor. However, DiSEqC's auto location feature isn't normally available when using these interfaces.

Feed hunting

Hardcore satellite enthusiasts don't use their motorised dishes to watch TV. Instead they hunt through signals satellites to find raw news feeds.

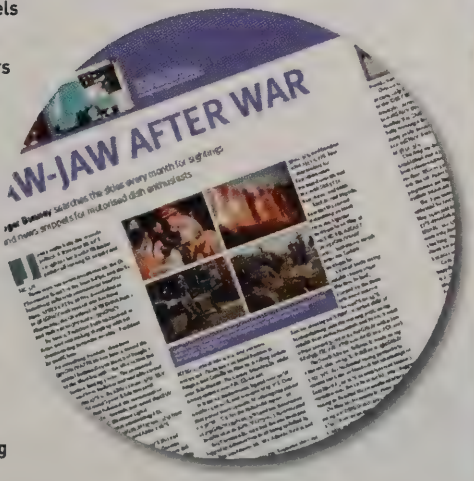
News feeds are the transmissions sent from outside broadcast units to news studios, in preparation for the news broadcast on TV. Not only can motorised dishes pick up feeds for the UK-based BBC News, ITN and Sky News, its possible to get feeds aimed at USA, Europe and Scandinavia.

News feeds are unedited they differ from what is seen on the regular news channels and give real-time look at events across the world. They also show what reporters get up to while they are waiting to go on the air.

As news feeds are not encrypted: they can be picked up using a free-to-air receiver, although as feeds can use odd symbol rates it is essential that the receiver is able to scan across its whole symbol rate range on each frequency. The best receivers for feed hunting are able to scan for symbol rates from 1000-45000.

Although Sky scrambles feeds for Premiership football matches to avoiding pirating, other channels don't always bother to encrypt feeds from foreign sporting events, allowing sports fans to watch sporting events from all over the world.

Some of the more exotic and unusual feeds come from inclined orbit satellites (birds that are low on fuel and can't maintain a fixed position, so they seem to move up and down). A vertical alignment motor must be installed on a dish in order to pick signals from these birds. This can be expensive, but many enthusiasts just build and install their own.



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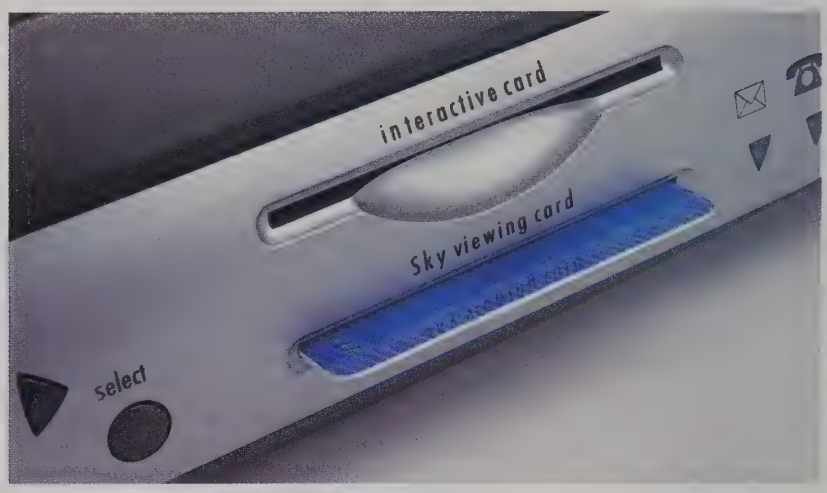


Recording Sky to DVD

Q I wish to record satellite programmes in good quality, but not with Sky Plus, as it involves a monthly payment or subscriptions to channels I don't want. Nor will a Freeview PVR fit the bill because the choice of channels is restricted.

So, I'm looking for a good DVD recorder to put in place of the ancient VHS deck I have at present, and would like your specific recommendation. I've always gone for quality rather than price, and so far it's paid off.

My needs, in brief, are RGB input facility, excellent picture and sound, and timer control of my Sky Digibox.

– *M. Freeman, Leeds*

A ***It's got to be the new Philips DVDR80 (below). Now that the Phillip's manufacturing bugs have been fixed, its DVD recorders have come to the fore. This one has the Guide Plus EPG by Gemstar, which can govern a Digibox by mimicking its infrared control commands. You get a choice of image quality/recording time options, and excellent pictures through RGB in and out. It's all yours for less than £500.***

Clean snow?

Q Thank you for the TV distribution guide on page 51 of your last issue (Winter). It has helped me pipe signals to three remote sets in my house, though we'll have to take care with late night programmes on satellite TV now that they can be viewed in the children's bedrooms!

Your advice on re-tuning the TVs and Sky Digibox to avoid carrier clashes is easy to follow, but in my area there seem to be lots of transmissions around, making it difficult to get the pictures free of patterning. How can this be overcome?

– *Edwin Foster, by email*

A ***Go to any one of the TV sets, with everything in the living room up and running, and tune through the UHF band. Settle on a channel which shows nothing but clean snow: no bars, shadows or ghosts. Take a note of its number then go into the set-up menu of the Digibox and pre-set its RF output to the same. That's the best way to find a clear spot. The other TVs can then be tuned in to the same channel, hopefully now with clear pictures.***

Fixed Costa

Q I'm a British ex-pat living about halfway down the right-hand side of Spain. I want to install, for myself and one or two other brown and wrinkly compatriots, some fixed dishes for satellite reception.

Can you point me towards a simple signal-strength meter with which to aim these? I don't want to pay a lot of money, and don't need something which looks like the flight deck of a helicopter.

– *Rowland Barrow, Torreblanca*

A ***No doubt you know that BBC programmes are off the menu for you unless you erect an 8ft dish. Satellite signal-strength meters come in a wide range of types, costing up to £2,500! Among the cheapest and simplest are in-line types with a dial and pointer, like the Teléves meter shown here, priced at £45 from Brymar on 0044 (0) 113 232 0005 or at www.brymar.co.uk***

You'll need an inclinometer and compass to get you started, after which the mini-meter will help you achieve a spot-on alignment – but it cannot offer any quantitative strength or signal-quality readouts, nor any identification of the satellite or broadcaster.

This Televés signal meter is a good buy for anyone setting up a satellite system

DIY repair disaster

Q When my Amstrad receiver (an early model, DRX100) went down with a caption indicating that no satellite signal was being received, I checked out the dish and LNB with my brother's Sony box, then replaced the tuner – it's often mentioned as being responsible for this fault. That didn't make any difference. Still I get the same no-signal caption and still the outdoor gear checks out OK.

Could I have got a faulty tuner?

– *David Couchman, by email*

A ***Probably not, and the likelihood is that the one you removed also works OK. You really have to have a proper diagnosis before you can prescribe or repair! There are many other fault possibilities for this symptom, among them silicon chips, capacitors, transistors, PC-board faults etc. Nor is it possible for me to suggest a culprit without the opportunity to examine and test this receiver.***

Put it down to experience, and either get the receiver repaired

professionally or replace it with another.

Assault and battery

Q I've got a Sky Plus receiver, and wanted to change the worn-out batteries in its zapper. Have you ever tried to do that? I pulled and pushed, sweated and snorted, then finally took it to the dealer.

The shop assistant tried, without success, and after struggling for a while took it to the upstairs workshop. Ten minutes later the job was done, and the remote control now works properly.

For next time's sake, what's the secret?
– *Alistair Breeds, Barnsley*

A ***As anyone else who has tried this will testify, it's no joke. Consulting the user's instruction book, which tells you to hold the front section of the zapper in one hand while pushing upwards on the battery cover clip. Now the cover can be pulled outwards and off – not easy with both hands engaged! It may be easier to enlist the help of someone else: arrange in advance who is to pull, who must hold, and which of you will lever. Best to put long life batteries in, then.***

Cable conundrum

Q I am looking to install a Sky dish. To keep the neighbours and my wife happy it will go up behind the potting shed at the far end of the garden, involving a long cable run into the house.

I work for a company with access to component catalogues, and see that even amongst 'low-loss satellite cables' there's some variation in types. Can you tell me which has the lowest losses so that I can do the best possible job of getting the signal into my lounge?
– *David Kinsella, by email*

A ***In short runs any proper satellite cable will do the job. For your needs (and for others who want optimum signal transfer) the best types are '100' cables, prefixed CT, HYC or QC. These are semi-airspaced and double-copper screened. Just as good are foam-insulated 100 types, prefixed WF, QF and HYF. Be guided by price, and avoid anything with a silver-coloured internal screen or marked 'CT-100 type'.***

Ask Arthur

Q From previous issues of your magazine and *What Satellite & Digital TV* I understand that a satellite's lifespan depends on its fuel consumption.

I read somewhere else that they don't need any motive power to keep them in orbit.

Can you explain?
– *Jason Woods, by email*

A ***Anything within range of Earth's gravity tends to fall back towards this planet. Things that are whizzing round are pulled away by centrifugal force. At an altitude of 22,000 miles (36,000km) these forces balance each other out when a satellite is travelling at 7,000mph (the speed needed to match the Earth's rotation). Because there's no air at this altitude there's no friction, and once set in motion at that speed and trajectory the satellite will continue thus forever. To us it will appear stationary.***

Fuel is needed, however, in 'puffers' to counteract slight drifting in position and to keep the transmitting dishes pointing towards Earth.

Sky Plus wipeout

Q I have a Sky Plus box and over a recent period of a few weeks its operation has slowed to a crawl. It takes 30secs to get the EPG up, and as long again to change channels or delete a recording. The Sky Plus technical helpline suggested switching off at the mains for a while. This had no effect at all.

I didn't take out an extended guarantee on this box, and so I'm hoping that you can get me off the hook without having to pay out lots of money.
– *E. L. Berry, by email*

A ***We suggest you carry out a Full System Reset by keying Services, 4, 0, 1, Select and then 7. We have known this to overcome what may be data fragmentation on the hard disc drive of a well-used Sky Plus.***

Before you go away and do this you must understand that while it will probably get your digi-recorder working as fast and well as it did when new, you will delete all the data in the Planner and any of your stored recordings. So before you reset the system you may wish to archive any valuable recordings.

Ultimate picture

Q Having picked up *Satellite & Digital Choice* and got myself into Sky TV with an excellent Panasonic receiver, I'm impressed with what's on offer on the film channels, and am now looking to update my very old 28in Sony TV.

If I were to suggest that money is no object, what would you say is the ultimate big-screen TV on which to watch it, one which would do true justice to the broadcast movies, and indeed to the pictures and sound available off DVD?
– *H. R. Saunders, by email*

A ***This section's How To guide has a bearing on this. The ultimate domestic large screen TV is the Bang & Olufsen Beovision 5 at a cool £12,995. Its picture and sound performance cannot be beaten as far as I know, and it's very swish!***

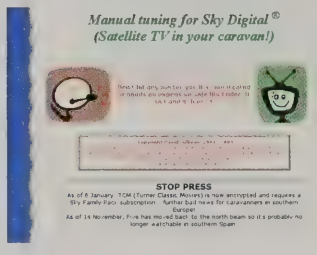
If you cannot reach as far as this, look at the top-end widescreen plasmas from manufacturers like Sony, Hitachi, Thomson and Panasonic. For pointers on the best large screen plasmas to buy see our group test on page 65.

Caravan man

Q Spring is coming! Meanwhile we're kitting up a caravan for touring in the UK and France, and I believe there's a 12V satellite box available now. Is it true, and if so where can we get one?
– Bill and Rita, by email

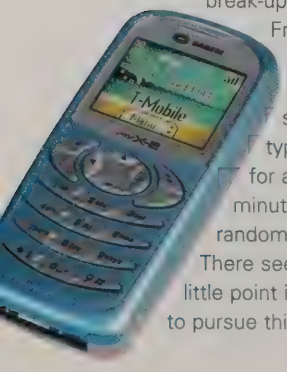
A ***Pace have a satellite receiver designed for reception in caravans and the like, working from a 12V supply and selling for under £200. This and a great deal of other caravan/12V equipment and accessories can be found at `www.roadpro.co.uk, tel: 01327 312233; www.leisurepower.co.uk, tel: 0845 082 0888; Terry O'Reilly, tel: 0151 252 0416; and www.clearview.uk.com, tel: 0207 376 3790, who can even do a motorised dish!***

A satellite strength meter will also be useful. There's an information-packed website specially for you and others like you at www.satelliteforcaravans.co.uk. It's run by enthusiast David Sullivan, and has lots of useful links.



Mobile vs TV

Q Living in a flat, and using the existing communal aerial system, I've suffered spasmodic break-up of Freeview pictures and sound typically for a few minutes at random times. There seemed little point in trying to pursue this, especially since other tenants in the same block had no such problems. I think it's interference from mobile phones as the same trouble cropped up when a visitor here used one. I believe it's coming from the flat next door on the TV side my room. Can it be reduced?
– R. C. Medwin, Maidstone



A ***Mobile phones conform to very strict interference-radiation standards, but can break through if they're close to a vulnerable TV set. Try moving the TV – and the Freeview box – to another part of the room. If that doesn't work, or is not practical, using ferrite rings for the cable entry points and double-screened co-ax flyleads may reduce the interference (available from specialist dealers).***

Mind the language

Q We run a language school here in Bournemouth, and want to get feeds of free-to-air TV channels in as many languages as possible and have them all on tap at all times. Can you tell us the most suitable satellites for this purpose, ones which don't call for huge dishes? And would it be possible to receive them on a single dish so that we can comply with planning regulations?
– Michael Howey, by email

A ***The ones to go for are Astra 1, Astra 2 and Hot Bird, at 19.2°E, 28.2°E and 13°E. Between them they offer almost 200 free to air transmissions in Arabic, French, German, Italian, Spanish and even Hindi. With a suitable dish and brackets it is possible to get them all at once. Consult a local dealer, (eg. Solent Satellite on 02392 384693) for help with installation and receiving hardware.***

Cheap IDTV

Q On a very restricted budget, and looking for a 28in TV with built-in Freeview tuner for use in my small flat. I've been offered a Goodmans widescreen model at little more than £400. Its price is way below that of anything else I've seen in this type of set, so I'm writing to you for any comments you may have before I commit myself!
– Terry Lyle, Evesham, Worcs

A ***For its price the Goodmans IDTV is very good, but it doesn't compare with models costing two or three times as much. This one has a bulgy screen with image geometry which leaves something to be desired. The picture and sound performance is reasonable rather than good.***

Regarding its Freeview capabilities the EPG (Electronic Programme Guide) system loads quickly.

No one can say that this model is not good value for money, but there could be problems with spares and service once the guarantee has expired.

Happy birthday Mum

Q My mum, now a septuagenarian, is very deaf and coming up to her birthday! I want to buy her a Sky system, but first need to know a couple of things. Is there a Sky box with a headphone socket and will she be able to watch and record subtitles?
– Joan Butler-Kerr, Taunton

A ***Sky Digiboxes don't have headphone sockets, but that's not a problem because most TV sets do. All that's required, then, is a headset which suits the lady and maybe an extension lead, available locally or from Keene Electronics on 0870 990 9000. A wireless headphone system, at £20-£60 (Maplin, 0870 429 6000) may help.***

Regarding caption reading, it's only necessary is to go into the Services menu on the Sky Digibox and select the subtitling option. What then comes out of the box has the captions burnt-in so that they appear on the TV screen and on recordings made by any means.

Landscape is back!

Q Many moons ago you reported the demise of the Landscape Channel. I love this relaxing, laid-back TV format, and was told that it was set to return. Of late I've searched for it in vain, zapping through all the programmes on offer via my Sky box, but without success. Is this a subscription channel, perhaps? Help me unwind in my precious late-evening leisure time!
– Clare Abbot, London

A ***Landscape Channel is one of my favourites – apart from those commercial breaks!***

At the time of writing this it's back (these things are very volatile) on Friendly TV, Sky EPG no. 268. The only snag is that it doesn't go out late in the evening: you'll need to record it between 4-9am and 10-11am for later consumption or archiving on tape or disc.

HOW TO... turn Sky Movies into a home cinema experience

WATCHING MOVIES ON TV HAS COME A LONG WAY FROM THE SATURDAY AFTERNOON MATINEE

The lights dim, the curtains roll away and up comes the roaring lion, the big man with the gong or the snow-covered mountain. For the next two hours you're going to be engrossed in a Western, a romance or an all-action blockbuster on the big screen, with the sound crashing, rumbling and echoing all around you. This doesn't have to be in the high street Odeon or Curzon, it can be staged in all its glory, right there at 23 Lobelia Gardens. With the right equipment.

The starting point, apart from the Sky Digibox, is a good TV screen. It's got to be a widescreen (16:9 format) and as big as possible: to simulate cinema viewing the TV's screen size, measured diagonally, must be a little just half the viewing distance (if you sit 8ft/2.5m from the screen get a 42-46in model). These are available primarily in plasma types, best perhaps for the typical lounge where other activities may be going on; and in projection form, which – experts claim – gives the most cinematic picture. Here there's a choice between rear-lit (housed in a big console cabinet) or front-lit (with authentic light-beam coming from the coffee table or the ceiling) types. Those able to dedicate a separate room for home cinema viewing should consider a projection model.

Projection TVs come in three types: those using cathode-ray tubes (CRT), LCD panels or DLP (Digital Light Processor) chips. The latter two have a powerful quartz-halogen bulb as a light source, while CRTs and plasma panels depend on phosphor-light. Front-projectors have lens controls with which the image size can be adjusted, to a whopping 12ft or 14ft, or more in some cases. If you go for one of these ensure that the throw ratio is sufficient for the depth of your room. Front projectors can be ceiling or table-mounted, and are ideally used with a purpose-designed screen. You can get electrically furling ones, and even power-operated theatre curtains. With any big screen it's best to see a demonstration before choosing and buying in simulated home and small cinema surroundings. Specialist dealers will be happy to do this for you.

The big widescreen picture is the main feature of home cinema of course, but the soundfield is very important. Current high-fidelity TV sound involves six or more audio feeds to loudspeakers placed around the room in just the same way as a cinema. Basic stereo comes from large speakers to the left and right of the screen, while dialogue issues from another, close to or behind the viewing screen. Ambient sounds, echoes and 'noises-off' are reproduced by two or more rear speakers (you should hear a helicopter circling or crowd noises on a good system!) while the whole caboosh is backed up by a subwoofer to put the boom and slam into these soundtracks.

Sky's All-in-One system gives you all you need

This dramatic, living, throbbing soundfield can be simulated by a Dolby Surround (Pro-Logic) or Dolby Digital TV set, but is better achieved with an 'all-in-one' system or a full-blown surround-sound decoder/amplifier and big, separate loudspeakers.

The latter have the most power and glory, while all-in-one outfits, based on a built-in DVD player, take the middle ground, with smaller speakers but a performance which belies them. If you go for this type make sure that it's equipped with input sockets for hook-up to your satellite box: optical or co-axial for Dolby Digital 5.1 and/or phono and Scart input ports for Pro-Logic.

This brings us to the question of sound feeds from the Digibox. All of these receivers have a stereo audio output in Scart or twin-phono form, from which external equipment can develop and project realistic Dolby Pro-Logic soundfields. The Sky Plus box goes a stage further, with Dolby Digital output for enhanced, tightly-targeted surround sound. Currently Dolby Digital audio is available on many Sky Movies films, including *The Lord of The Rings: The Fellowship of the Ring*, and will soon come to life on the Box Office channels.

So sit back, dim the lights – put them out, indeed! – and enjoy your movies. Have the popcorn handy. No real cinema runs films at the hour and moment that suits you, or permits you to enjoy a wine or beer in the stalls – or in your case the comfortable leather armchair. ■

Sky Plus is the only Digibox with a Dolby Digital output

Freeview watch

INTERESTED IN GETTING OVER 30 CHANNELS THROUGH YOUR AERIAL? THEN CHECK OUT THE LATEST IN FREEVIEW ADAPTERS

Since Freeview launched a year ago we've seen a stream of Freeview-ready set-top boxes arrive in the high street. Clearly, the lure of 30 TV channels and 20 radio has been great for the estimated 2million owners of Freeview boxes in the UK who've rushed to embrace the chance to receive free digital terrestrial TV through their TV aerial.

Freeview adapters come in all shapes and sizes, from basic 'plug-and-play' adapters to combination DTT/DVD players and even a hard disc-equipped personal video recorder (PVR) – the Pace Twin Digital Recorder (no doubt the first of many such products to come). What's more, just like DVD players, heated competition between manufacturers means that prices are falling all the time. Already we're seeing adapters coming on to the market priced around the £60 mark; a year ago you couldn't pick one up for much less than £100.

Indeed, while we've reviewed the following on the basis of their 'guide' price, shop around (especially on the internet) and you may well find them for a lot less.

For tips on what to look for in a Freeview adapter, see our *Buyer's Guide* on page 70.

In the meantime, here are three Freeview providers for your consideration. ■

ADAPT AND WIN

Goodmans GDB 3	£100
Pace DT-210F	£90
Pioneer DBR-TF100GB	£100

Goodmans GDB3

There is nothing particularly special about the GDB3 from budget electronics firm Goodmans, especially compared when its sibling, the GDB5, which has a built-in DAB radio tuner. Even the design isn't particularly original – it resembles a budget DVD player, unlike some of the curvier Freeview adapters around.

The adapter is fitted with a UHF loopthrough, stereo phone outputs and an RS232 serial port (even though the box's software is updated over the air) and two Scart sockets (one RGB-capable). However, there's no digital audio output socket – an increasingly common inclusion on many other adapters.

The adapter is very easy to use as the menu is clearly laid out and tuning is a simple process. When the auto tuning routine starts, select the TV's format (4:3 or 16:9) and tuning begins. The GDB3 is able to lock onto a wide range of signals, and can maintain a stable picture in low-reception areas.

The EPG covers three-quarters of the screen and includes a now-and-next display for all channels. This system is also able to schedule programme reminders, and there is a five-event manual timer as well.

The Channels List menu (opened by pressing Select) has a favourites list for faster access to regularly used channels.

Pressing the Info button on the remote brings up a quarter-screen information bar that includes a now-and-next display and signal strength.

MHEG-5 software is included and the BBC's ever-expanding digital teletext service was particularly quick to load.

Other features include a letterboxed widescreen mode and the PIN-based parental locks on channels.

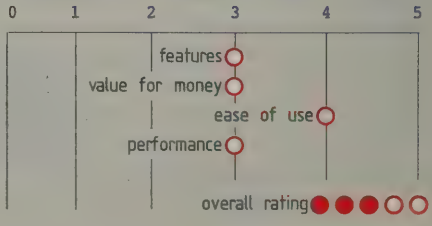
Pictures are colourful, though soft, and sound quality was also acceptable, although again audiophiles will bemoan the lack of a digital output.

Shortcomings aside, the GBD3 is an still easy-to-use adapter perhaps best suited to second TV setups.

Nonetheless, both the Pace and Pioneer adapters reviewed here have more features (including event timers and digital audio outputs) and offer marginally better tuners.

PRICE £80

Features: UHF loopthrough, 2x Scart, stereo phonos, MHEG-5 software,
Supplier: Goodmans Tel: 023 92391100
Website: www.goodmans.co.uk



Pioneer DBR-TF100GB

Editor's CHOICE

Pioneer's latest digital terrestrial TV receiver (the company previously produced adapters for the ONdigital service) is a stylish, feature-packed device.

As an example of the thought that has gone into the adapter, one of the DBR-TF100GB's most unique selling points is a screensaver to prevent burn-in on plasma and LCD TVs.

The back plate holds two Scart sockets (both S-video-compatible, but only one RGB-capable), a modulated UHF connection for the Scartless, and an optical digital audio output that is Dolby Digital-compatible. There is no serial link as software updates are automatically carried out in over-the-air transmissions.

Setup is straightforward. Once a UHF channel for the adapter and the TV's format (16:9 or 4:3) is chosen, the adapter will search for stations and automatically tune them in.

The icon-based menu system revolves around a central hub – the Home Menu. From here the EPG can be accessed, up to 10 timer events can be set, the favourites list accessed and configured, parental locks applied to channels, signal information displayed and the picture format chosen (16:9, 4:3 cutout or 4:3 letterbox).

The EPG covers about three-quarters of the screen, displays the current channel in the top-right and provides a now-and-next display for each channel. Pressing the remote control's Info button brings up a banner with now-and-next details for that channel.

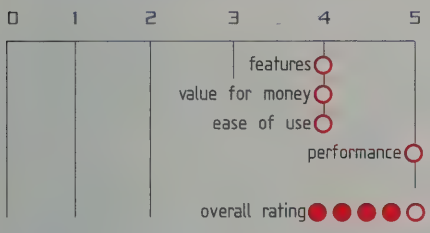
In addition to the screen saver another unique feature to the adapter is the Video Snapshot. This can be used to store up to 14 grabs from broadcasts in the box (ideal when watching a goal-filled football match).

As expected from a heavyweight like Pioneer, this adapter's performance is top-notch. Signals are stable, while pictures are crisp and detailed, with only minor artefacts being detected.

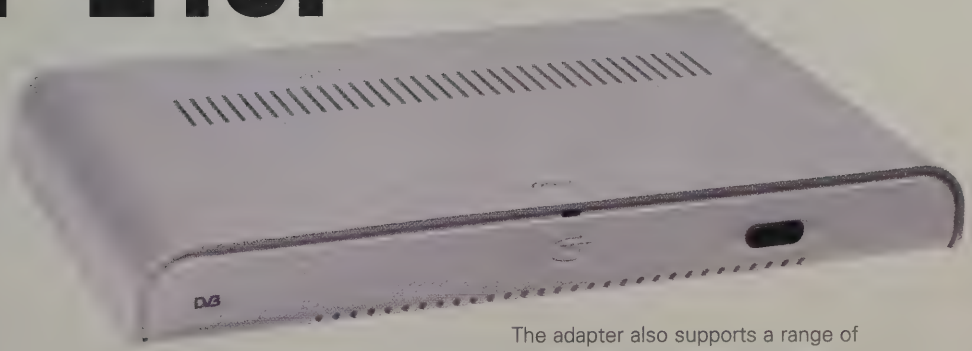
While it's not as good as Sony's entry in the market, the DBR-TF100GB is a first-rate digital TV adapter and the extra features make this box excellent value for money.

PRICE £100

UHF loopthrough, 2x Scart, optical digital audio output, MHEG-5
Supplier: Pioneer Tel: 01753 789500
Website: www.pioneer.co.uk



Pace DT-210F



This is the second terrestrial TV receiver produced by Pace – a company better known for its satellite receivers. When Pace made the DTVA it was one of the first companies to release a terrestrial digital TV receiver, predating the launch of Freeview by a few months. Unfortunately, The DTVA was quickly superseded by adapters from other manufacturers offering more features and better connection options, meaning an upgrade was inevitable.

The DT-210F is a stylish device featuring a curvy top and an austere semi-grilled front. The remote control is unchanged from the DTVA's, but remains serviceable and responsive.

The back panel contains two RGB-compliant Scart sockets, a modulated UHF loopthrough for connecting the box to non-Scart TVs, and both analogue stereo and optical digital audio outputs.

The menu system is a tweaked version of the DTVA's – the most significant update being that now it features a seven-day EPG with a now-and-next display, eight favourite lists and a 12-event timer (with an optional onscreen reminder).

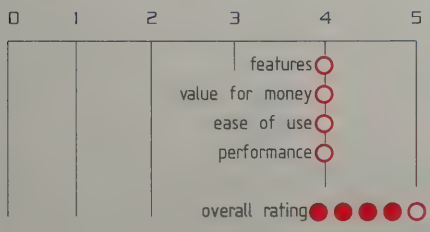
The adapter also supports a range of picture formats (full-screen, 16:9 or 16:9 letterbox) and an automatic setting. Interactive services are fast to load.

The receiver was tested in an area known for its weak digital TV signals, but it was able to lock on to every digital TV multiplex available – including the often-problematic likes of ITV1 and Five. Although borderline signals predictably produced jumpy pictures, overall the picture quality was excellent. Images were strong, with little pixellation or softness.

Although this receiver doesn't offer anything extraordinary, it is a commendable attempt at producing a good quality, future-proof Freeview receiver.

PRICE £115

UHF loopthrough, 2x Scart, optical digital audio output, MHEG-5
Supplier: Pace
Tel: 01274 532000
Website: www.pace.co.uk



Survival of the fittest

ANALOGUE TV IS DYING OUT FAST. HERE ARE FOUR REASONS FOR MAKING YOUR NEXT TELEVISION AN IDTV

Put simply, an integrated digital television (IDTV) is basically a widescreen TV with the equivalent of a a Freeview adapter inside. These make great buys for anyone who is upgrading their TV, but also wanting to get into digital TV on the cheap. What's more, because there's no external adapter required, you don't the hassle of making space for and hooking up another box to your AV setup.

Currently, around 30 digital TV channels and 15 radio stations that can be received by an IDTV or a Freeview adapter (for a list of the channels currently available see our channel guide on page 98).

There are a number of features to look out for when buying an IDTV, though often the same buying criteria can be applied to purchasing a conventional TV.

A frequent inclusion is one or more common interface (CI) slots, similar to those usually found on satellite receivers. Digital terrestrial pay-TV services (like the now-defunct ITV Digital) service are unavailable right now, but might make a comeback in the future most likely in the form of pay-TV movie or sport channels.

Connections are also something to consider.

Having at least two Scart sockets makes it less of a headache to connect the VCRs, satellite receivers and DVD players that are no doubt piled up in your living room.

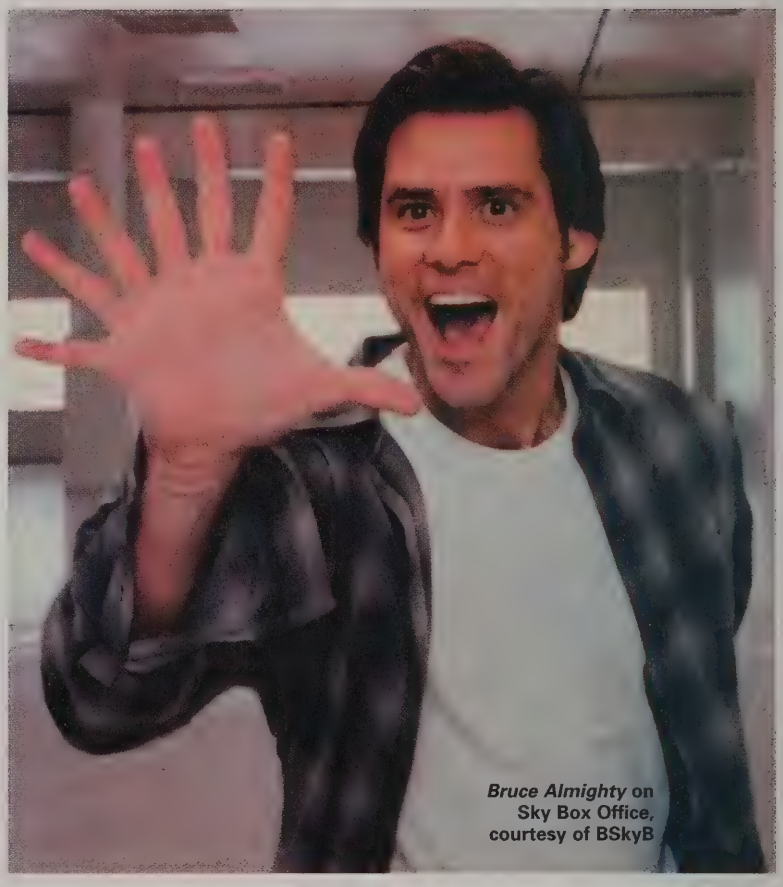
Composite video or S-video outputs may also be present – these can also be used to connect other equipment to the IDTV (such as a camcorder), but the image quality will not be as good as that from an RGB Scart connection.

Many IDTVs also come with stereo phono connections which can be used in conjunction with external speakers to enjoy stereo sound from Freeview programmes.

Just about every new IDTV released will have MHEG-5 software installed, which allows the user to access red button interactive services such as digital teletext.

Another common feature is an EPG. Typically, these display now-and-next info for received channels where broadcast. Increasingly, we're starting to see IDTVs with seven day-ready EPGs on the market.

This is in preparation for the eventual broadcast of seven-day information for Freeview channels (currently held back by bandwidth issues). There is currently a limited seven-day EPG 'channel' available on Freeview but this information can only be accessed by Fusion branded adapters and IDTVs.



***Bruce Almighty* on Sky Box Office, courtesy of BSkyB**

In some cases, EPGs can also be used to setup a reminder that a programme you want to watch is about to start and to instruct a VCR or DVD recorder to record a programme from a digital channel.

As with any TV, aesthetics can be as important as technical considerations. Widescreen IDTVs can be very large, so make sure there is space to fit the TV and its stand in the room. Naturally it should look good too. Nobody wants to watch a perfect picture on an ugly TV!

Last but not least, there's performance. Anyone who has taken the 'taste test' will tell you that DTT pictures are sharper and far more detailed than those from an analogue source and a decent quality IDTV should reflect this. After all, that's one of the reasons for buying one in the first place!

ALL-IN-ONES

Panasonic TX-32DT30	£1,200
Panasonic TX-32DT4	£430
Sanyo CE28DFN2	£599
Sony KD-28DX50U	£600

Panasonic TX-32DT30

Dreams of a big screen home cinema experience often fall apart when people find out just how much space a widescreen TV can take up, but the TX-32DT30 could be the answer to these dreams.

This 32in, 16:9 TV has been carefully designed to give it a remarkably small footprint – close to that of larger 28in sets. Not only that, it's a real looker: a clear, silvery-grey fascia with blue-grey speakers that run down the sides. Despite being big, this TV will not draw attention to itself when it is powered down.

On the practical side, Panasonic has given this device a handy range of connections. There are three Scart sockets for connecting to VCRs, DVD players and audio systems (two of which are RGB-capable), two common interface slots and a modem.

'This 32in, 16:9 TV has been carefully designed to give it a remarkably small footprint'

The TV's features list is also impressive, including a 100Hz refresh rate and a flicker reduction mode (vital on a TV this size), a noise reduction mode, geometric tiling (to prevent yellow blobs appearing on the screen), a now-and-next EPG (with a eight-event, one week timer), and a DVB tuner lock (to stop the digital channel being changed when it is being recorded).

It is also possible to watch an analogue broadcast while recording from a digital channel.

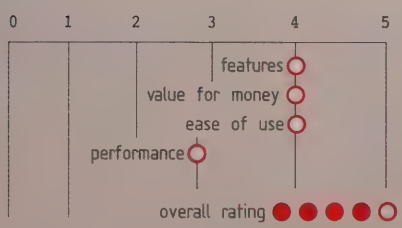
All of this impressive functionality is backed up by the TV's performance.

Digital TV pictures are excellent – colours are rich and vibrant without becoming unrealistic, and the contrast range is superb. Images from analogue broadcasts are below average, although not terrible. However, we did notice some evidence of colour-bleed.

Sound quality is a bit of a let-down, however.

Although soundtracks are dynamic and crisp, they lack any depth and seem insubstantial.

However, despite these concerns this remains a well-designed IDTV, with a wide arrange of features and a performance level that just about justifies the high price.



FEATURES: 32in screen, 16:9 format, built-in digital tuner and DVB decoder, Nicam stereo, 100Hz flicker reduction, noise reduction, NTSC playback, 3x Scart (two RGB capable), modem, MHEG-5, twin CI slots, EPG
CONTACT: Panasonic
Tel: 08705 357 357
Website: www.panasonic.co.uk

PRICE £1,200

PROS AND CONS

- ⊕ Easy to use, good digital picture
- ⊖ Sound a little underwhelming

Panasonic TX-32DT4

Throughout 2003, Panasonic released a large range of IDTVs at prices that would suit almost every pocket. This IDTV has been released alongside a 28in version (which costs around £550, but it does seem expensive, given its specifications.

This IDTV is much less boxy-looking than previous Panasonics, although the indented base does make it seem that someone kicked the set before it was delivered. Topping off the package are charming sloping speakers and a matching stand.

The TX-32DT4 is fitted with two Scarts (only one is RGB-capable). This may seem stingy at this price point, but the integrated tuner does mean that the set doesn't need hooking up to a Freeview adapter. There is also a stereo audio output and a UHF aerial, a common interface slot for inserting CAMs to access terrestrial digital pay-TV (if it ever returns), and a socket to attach an external modem.

The flip-down panel on the front covers the standard control buttons, headphone output, S-video and composite video outputs and stereo audio inputs. The remote control, meanwhile, is an intelligently laid out variation on a now-familiar Panasonic design and, although a little wide, it still remains palm-friendly.

'Pictures from the digital tuner are bright and colourful, with a good contrast range'

When turned on for the first time the IDTV will automatically tune into available digital channels.

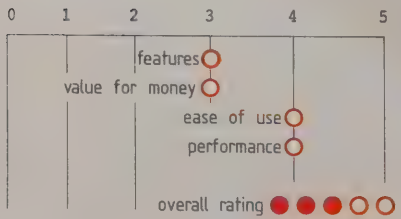
There is a seven-day EPG (currently it's limited to displaying now-and-next information) which can store channels under preset Free TV, Radio and Pay-TV lists and user-defined favourites lists. There is also an eight-event timer and a signal quality meter. The TX-32DT4 also has MHEG-5 software for red-button interactive services and both digital teletext and interactive services work quickly.

Pictures from the digital tuner are bright and colourful, with a good contrast range. However, they are soft and lack detail when compared with pictures rendered by the other Panasonic in this test, the TX-32DT30.

There was also some slight flickering (a fault common to 50Hz TVs) which is especially evident when the EPG is used. This isn't very distracting, but it shows why it's worth getting a 100Hz model.

The built-in speakers give rich, clear and dynamic renditions of Nicam stereo, with clear dialogue (unless the 'Ambience' option is used – in which case the sound has a strange muted quality, slightly swamping dialogue).

The TX-32DT4 is easy to use and comes with a fairly decent digital tuner. However, as Goodmans is releasing IDTVs with similar specifications as this one for £400, and there's the likes of Philips' superior IDTV for about the same money, there isn't quite enough here to justify this set's high price.



FEATURES: 32in screen, 16:9 format, built-in digital tuner and DVB decoder, Nicam stereo, 50Hz flicker reduction, NTSC playback, 2x Scarts (one RGB capable), RS232 connection, MHEG-5, CI slot, EPG
CONTACT: Panasonic
Tel: 08705 357 357
Website: www.panasonic.co.uk

PRICE £950

PROS AND CONS

- ⊕ Easy to use, excellent sound from built-in speakers
- ⊖ Too little for too much money

Sanyo CE28DFN2

Described as a 'budget' TV on its release, this 28in widescreen IDTV costs the same as the excellent Sony KD-28DX50U.

However, this IDTV can't meet the challenges set by the Sony effort. Given the performance of the CE28DFN2, a demonstration is recommended before handing over any money.

The CE28DFN2 looks rather bland – its fascia curves inwards and looks rather plasticky, while the extra-wide speaker grilles on the side just serve to emphasise the feeling of cheapness.

The front panel conceals audio and composite video inputs and an output for headphones.

Round the back there are two RGB Scart sockets, stereo phono connections and a UHF input. There is also a single common interface slot, in case digital terrestrial pay-TV makes a comeback.

The remote control is also rather dull-looking and covered in small but well-labelled buttons, one of which allows you to switch directly between the digital and analogue tuners. It's broad at one end and can be a little uncomfortable to hold.

'Compared with other IDTVs at the £600 price mark, this set's shortcomings are all too obvious'

The set efficiently tunes into digital and analogue signals when it is turned on for the first time. The menu interface is very easy to navigate; it should be because it is a virtual clone of the one used in Pace Freeview adapters – which is one of the most user-friendly available.

There is a full-screen now-and-next EPG (now-and-next programme bars are also available) and a 12-event timer.

You can check signal information for each channel and MPEG-5 software comes pre-loaded for interactive services.

Pictures are bright and colourful, but other than that are disappointing on a television in this price bracket.

Large areas of solid colour have a tendency to appear unnatural and cartoonish, even after the brightness, contrast and sharpness are tweaked.

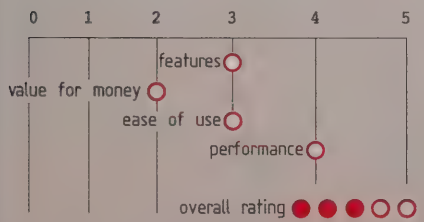
Although they are detailed, digital images were prone to shimmering and artefacts appeared in fast-moving footage.

The 10W speakers are not exactly the best we've heard, either. Sound is hollow and lacks any real power. Using the 3D surround option does add more depth, but it is still tinny.

This IDTV may be a budget model, but its performance doesn't justify its price.

If the set had cost around £400 these problems would have been just about acceptable.

However, when it is compared with other IDTVs at the £600 price mark, this set's shortcomings are all too obvious.



FEATURES: 28in screen, 16:9 format, built-in digital tuner, 2 x Scart (both RGB), 12-event timer, MHEG-5, common interface slot, EPG

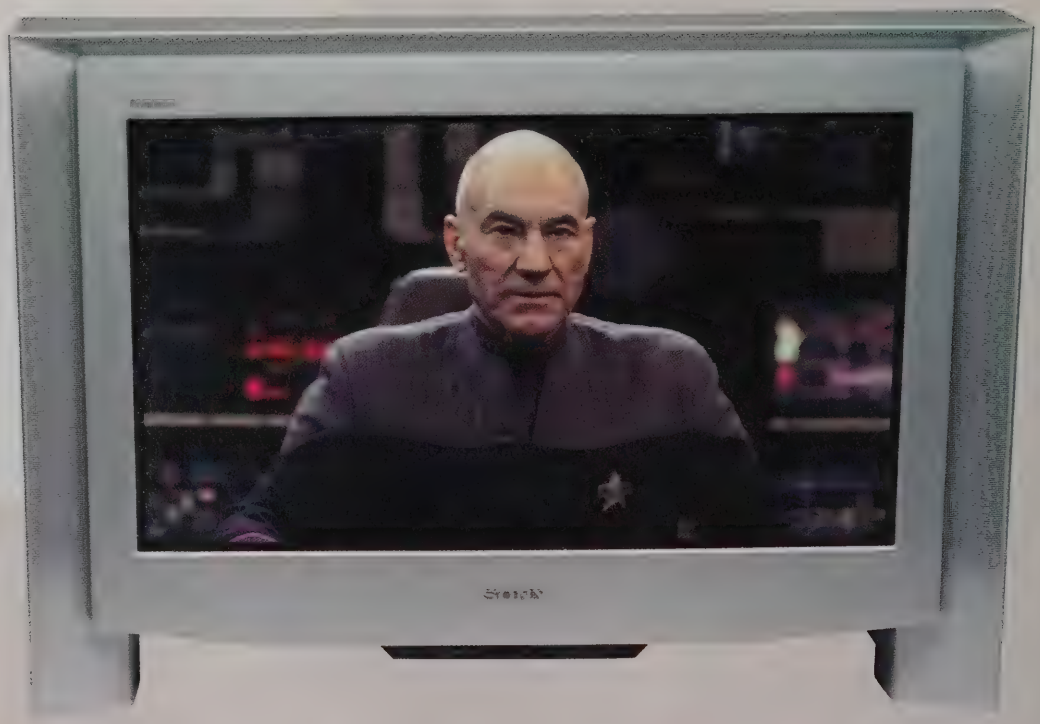
CONTACT: Sanyo
Tel: 01923 246363
Website: www.sanyo.co.uk

PRICE £599

PROS AND CONS

⊕ Excellent menu system

⊖ Very poor speakers, digital images prone to shimmering and artefacts



Sony KD-28DX50U

This 28in widescreen CRT TV is the first in Sony's new line of CRT IDTVs, and we can expect to see flatscreen LCD and plasma TVs with integrated digital tuners later this year.

The KD-28DX50U is a mid-range IDTV and so doesn't have some features seen on higher-end Sony models, notably a 100Hz flicker-free display. It is a good performer, however, and on its own merits, it doesn't really lack for anything.

This TV's design is striking, with bold angles, silver colours and a prominent frame around the screen. It does look at its best when displayed on its two-shelf stand. The black panel on the front opens to reveal control buttons and AV connections (headphones, S-video in, composite video in and stereo audio phonos).

On the rear of the TV are two Scarts (one RGB, one S-video), stereo phono outputs, a common interface slot and three UHF sockets.

Setting up the KD-28DX50U is simple – the first time the TV is turned on it prompts the user to start the automatic channel search. This covers both analogue TV and digital Freeview channels. Located channels can be stored in six lists (All, News, Favourites, Choice – often used channels, and Recent – the last five channels accessed used) accessed by pressing the remote's OK button.

'Digital images have sharp edges, a large amount of detail and little pixellation'

There is a three-quarter screen, seven-day EPG. Current channels are displayed on the top-right of the screen, with now-and-next for five other channels underneath. Pressing Info brings up a programme bar and now-and-next for the channel.

There is also an event timer which has options for Smartlink-compatible video and DVD recorders.

The TV uses the MHEG-5 standard for interactive TV services, and also has a manual tuning option and a PIN lock feature.

Despite the lack of 100Hz processing or Sony's proprietary Digital Reality Creation system to improve image quality, image quality is generally good.

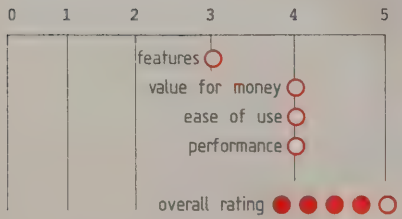
Colours are rich and don't bleed, although pictures from the analogue feed are predictably pale when compared with those from the digital tuner.

Digital images have sharp edges, a large amount of detail and little pixellation – exactly what you'd hope for from digital TV.

The Virtual Dolby is not as convincing as a real 5.1 or 6.1 speaker setup, but does help to add atmosphere to movies. Nicam stereo is respectably forceful when put through the TV's 7W speakers.

Operating the KD-28DX50U is easy and the AV performance is good, making this a decent mid-range TV for those who want Freeview and a widescreen TV without the hassle of an extra box.

Editor's CHOICE



FEATURES: 28in, 16:9 format, built-in digital tuner, Nicam stereo, 2x Scart (one RGB), MHEG-5, CI slot, EPG

CONTACT: Sony
Tel: 08705111999
Website: www.sony.co.uk

PRICE £600

PROS AND CONS

- ⊕ Simple to set up, good digital and analogue pictures
- ⊖ No digital audio output, only two Scarts

The Ring on Sky Box Office. Picture courtesy of BSkyB

Glued to the screen

WANT TO OVERTAKE THE JONESES IN THE AV STAKES? THEN PLASMA DISPLAYS ARE THE WAY TO GO. JAMIE EWBANK CHECKS OUT SOME OF THE MOST STUNNING PLASMA SCREENS AROUND

Gas giants are familiar to astronomers, most notably in the form of Jupiter – the thumping great big planet made of gas, and father of the Roman gods. But there are other gas giants abroad, namely plasma screens – thumping great TV screens full of gas, and the daddy of all AV equipment.

Plasmas are a big ticket item, with even cheaper ones still bearing four figure price tags. Plasma offers a richness of detail and colour and contrast unsurpassed in the AV world, and knock their nearest rivals, LCD, into the shade. Even lower end plasma displays deliver pictures you feel you could reach into, and the ones in this round up are far from the low end.

Another future advantage of plasmas is the prospect of feeding them high-definition pictures. As yet HDTV occupies a middle-ground between being the next big thing, the finest available picture in the AV world, and being an also ran, crippled by the cost and complexity of actually getting it off the ground and into your living room. That's said, there's already one satellite music channel broadcasting in hi-def (see Picture Perfect, page 25), so it seems that these teething troubles will be defeated, and plasmas will likely be the best way of taking advantage of the format when it eventually becomes more widespread.

At present, however, plasmas can only work with what they're given, and in the case of analogue television there is the slight hitch in as much as plasma panels are just too good and are unforgiving of analogue signal quality.

The best use for a plasma is with a good digital set up, complete with a good quality receiver, TV, DVD player and surround sound system. If you're planning to invest in a plasma screen you won't want to scrimp on the goodies you hook it up to.

PANEL BEATERS

Pioneer PDP-43HDE	£4,500
Panasonic TH-42PA20	£4,500
Fujitsu P42VHA20ES	£3,500
Hitachi 42PD3000E	£4,500

Pioneer PDP-434HDE

This 43in plasma is the first on the market to feature HDMI (High Definition Multimedia Interface), which allows uncompressed digital video and audio from compatible players and broadcasts (including HDTV) to be played on the TV. The future potential for HDMI is massive, as it allows hi-def picture to be input through a single cable.

The PDP-434HDE is a good looking TV, with a glossy black screen surround and a set of speakers that can be positioned at the bottom or sides of the screen, or mounted separately. The screen itself can be hung on the wall or propped on one of three stands.

Cabling is simplified by a breakout box that plugs into the screen by a single cable. All the other cables are plugged into the box, and what a choice there is: HDMI, component video, three Scarts (two composite/RGB/S-video and the other providing RGB in and composite out), two S-video sockets, two composite inputs, two stereo audio inputs, subwoofer output, aerial input, control in and outputs, PC card slot, PC audio input, headphone socket and i/o Link.A select switch.

'All we can say is that these are the sharpest, deepest, cleanest pictures we've ever watched.'

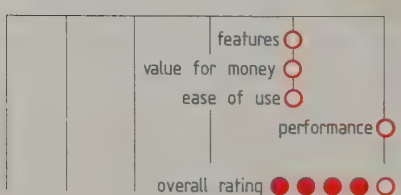
The PC card slot reads memory cards using an optional card reader. The display comes supplied with several photos on it already or you can import your own photos for display.

Operation is dead simple, with the on-screen menus being simple and easy to navigate, with all the tweakable features placed at your fingertips and controlled from the sensibly laid out remote.

The panel has an XGA (1024x768) resolution and an internal processor that separates analogue conversion and digital processing, to avoid artefacts. The panel also boasts over a billion colours and over 1,000 greys.

Plasma's always show up the comparatively poor quality of RF pictures, and the PDP-434HDE is no different, being just too good for most of what's fed into it. Digital pictures, however, are amazing – grain free, with sharp edges and deep, rich colours. The only complaint, and it's a minor one, is that trait common to plasmas, of solarisation that gives a kind of living feel to large patches of colour. Switch over to HDMI and your socks will be well and truly knocked off – all we can say is that these are the sharpest, deepest, cleanest pictures we've ever watched.

Audio performance is excellent in general, although more suited to TV broadcasts than DVDs, where you'll be wanting a full surround sound system to take advantage of the soundtrack. All told, the best screen we've ever seen.



FEATURES: 1,200:1 contrast ratio, pure cinema and ADV modes, four preset video modes, five preset and one customisable colour temperature adjustments, three MPEG NR settings, three DNR settings, dynamic range expander, Nicam stereo output, PAL progressive, auto tuning, JPEG viewing and slideshow, teletext, multiple aspect ratios.
CONTACT: Pioneer, 01753 789 500, www.pioneer.co.uk

PRICE £4,500

PROS AND CONS

- ⊕ Excellent HDMI pictures, good looks, feature rich
- ⊖ Slight solarisation

Panasonic TH-42PA20

It's not just the inclusion of speakers and a tuner that makes the TH-42 stand out from other Panasonics range – it's also their most attractive model. At just 99mm deep the slimline TH-42 is a looker, with a minimal chassis in black and silver, it's the sort of panel that would fit in nicely to the average person's dream living room.

The socketry selection on the TH-42 isn't broad, but it covers most eventualities. Two of the three Scarts are RGB capable, and there's a set of RCA jacks for feeding component video, both progressive and interlaced, from a DVD player. At the front of the panel, concealed behind a flip-down hatch, are S-Video, composite, stereo audio and headphone inputs, as well as a 15-pin socket for PC connection. Surprisingly, considering Panasonic's devotion to the Secure Data card format there isn't a card reader, nor a DVI input for feeding digital images from a PC or suitable DVD player, but these are the only notable absentees.

The onscreen menus are rather spartan, offering only a few options for tweaking the picture quality. Advanced picture controls for adjusting gamma and white balance levels are available for PC feeds, but strangely not for the video options. The OSD and the panels general functioning are both controlled from an excellent remote control that's both intuitive and well designed out, putting every option within one-touch reach.

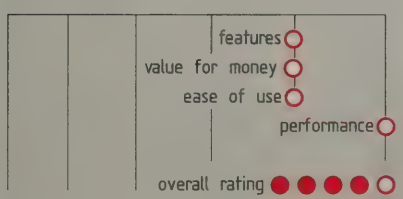
The feature list boasts a few notables items, such as the Real Black Drive that reduces pre-discharge emissions in order to provide deeper, darker blacks. Deep dark blacks are clearly a concern of Panasonic's, as the TH-42 also has a Deep Black Filter, which contributes to the panels whopping 4,000:1 contrast ratio.

When it comes to performance the TH-42 is an excellent panel. Its most notable achievements are the subtly defined, yet wonderfully rich, colours, not to mention the absolutely astounding contrast levels and blacks darker than any other plasma we've watched.

On progressive feeds the TH-42 produces clean, glitch-free images with bags of fine detail and no motion blur on pans or other camera movements. RGB images are similarly clean, although not as rich as those from component. When watching broadcasts through the RF feed there's a hint of noise, with grain and dot crawl making an unwelcome, but not overly intrusive, appearance. With HDTV feeds the results weren't quite what we expected, with a hint of shimmer and solarisation apparent.

Audio is, again, fine for TV broadcasts, but as with all plasmas, when the picture performance is derived from a good source like DVD you're going to want a speaker system to match, and that means more than just the two supplied with the panel.

All told, the TH-42 doesn't quite match the pricier PDP-434 but it comes close, being one of the better screens we've seen.



FEATURES: 4,000:1 contrast ratio, Digital Cinema Reality mode, four preset picture modes, three tint settings, multiple aspect ratios, sound level adjustment, two preset audio modes, white balance and gamma adjustment in PC mode, Nicam stereo, Q-Link compatibility.
CONTACT: Panasonic, 0870 535 7357, www.panasonic.co.uk

PRICE £4,500

PROS AND CONS

- ⊕ Detail, colour and contrast are all excellent
- ⊖ Noisy RF pictures

Fujitsu P42VHA20ES

The P42VHA20ES is the entry level of Fujitsu's plasma TV range and the cheapest panel in this round-up. The saving between this and the most expensive in the round-up is a whopping £1,000, but the trade off is that this is sold as monitor only – there's no built-in TV tuner, so you'll need an external feed. Also, despite the presence of a 1-bit digital amp, the P42VHA20ES is supplied without speakers, which are an optional extra at £275.

Its another pretty little number, with a simple silver frame and, due to the absence of speakers, a uncluttered look. A few controls are dotted down the side of the chassis.

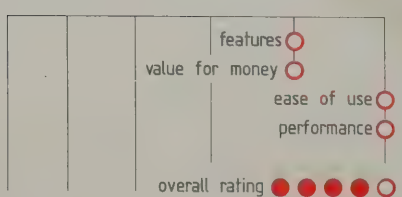
The absence of a breakout box means all the connections are located on the back of the panel. At first glance the array of sockets doesn't look that versatile, with the highlight being a DVI socket for importing digital pictures from a PC or DVD players. A set of BNC terminal is present for accepting analogue RGB feeds from a computer and also for accepting component feeds, although you'll probably need an adapter, as most DVD players feed component through RCA jacks rather than BNC. There's also a 15-pin D-Sub for PC connection, a serial port, three sets of stereo audio inputs and spring clips for stereo speakers. You get a choice of other inputs-the PT-E101 board supplies RCA component, S-Video and composite inputs, while the PT-E1000E adds an RGB capable Scart. Not the broadest socketry selection ever.

The feature list is rather better. Most notable is the presence of a Fine mode, a processing feature that adjusts all aspects of every feed into the panel for optimum cinematic look. It's a lovely feature that works very well, and is augmented by a Dynamic setting which cranks all the level settings through the roof and is ideally suited to image feeds from PCs or consoles. An Advanced Video Movement digital processor smoothes motion blur and judder out of your pictures as well.

When the dynamic option is switched on and the panel is fed component images there is an element of pixel noise present in the picture, and graininess creeps in. Switch the feed over to a PC, however, and the images are so vivid as to be eye-opening.

Feeding DVD picture into the Fine mode and you'll get smooth, grain free pictures with lovely natural colours that are incredibly lifelike. This in part down to the excellent contrast level and the presence of truly moody blacks in the picture. Detail and texture abound all over the picture, and the background detail is good enough to give the pictures a deep, multidimensional feel.

The only gripe, and its one present on a great many plasmas, is a hint of colour banding. This and the lack of connections are the just enough to bring this display down, but considering the price of this panel, they're not serious complaints.



FEATURES: 3,000:1 contrast ratio, AVM processing, Fine and Dynamic modes, precision setting with luminance, black level and R G B level adjustment, multiple aspect ratios, eight memory blocks, 24 frame mode, bass, treble, loudness and balance adjustment.
CONTACT: Fujitsu, 020 8731 3450, www.fujitsu-general.co.uk

PRICE £3,500

PROS AND CONS

- ⊕ Colour reproduction and image detail are excellent
- ⊖ DVDs glitch in dynamic mode, lack of connectivity

Hitachi 42PD3000E

A quick run through the spec tips you off that this is a great screen – a whopping 1024x1024 resolution, a clever chipset that allows independent adjustment of tint and brightness for better colour reproduction and contrast.

The 42PD3000E also has what's referred to as vertical temporal three-field image processing technology. Behind a title so preposterously grandiose that Hitachi might as well have just called it Glorious El Presidente, lies what is essentially a very advanced noise reduction technology.

Also onboard is a form of progressive scanning that shows each picture line at once rather than doing alternate passes. This limits power consumption and should hopefully pad out the screen's lifespan.

All this techno jiggery-pokery is housed within a slim, sleek silver frame that looks great, has thumping great speakers on either side and can be wall mounted or fitted onto a stylish stand with a 30° swivel mechanism.

'Provides blacks darker than a villain's heart and colours that leap of the screen'

The 42PD3000E's tuner is housed in its breakout box, which also provides a host of AV connections. These include three Scarts, two of which are RGB capable, progressive scan component video inputs, S-Video input, composite input, S-Video/composite output, headphone jack, 15-pin PC connection, PC sound input, phono-audio output, centre channel input, RF input and digital AV output to screen. Quite a list.

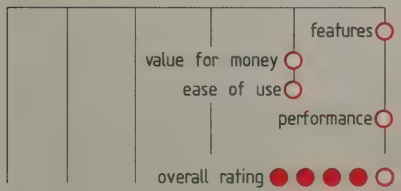
The 42PD3000E's performance is excellent, with the 1,000:1 contrast ratio providing blacks darker than a villain's heart and colours that leap of the screen whilst retaining an authentic feel.

The processing is excellent and the commonplace plasma foibles of colour banding and solarisation are almost entirely absent, and despite the incredible amounts of fine detail on show there's almost no evidence of grain in the pictures.

Subtle or slow movements do give the panel some slight problems and create a slight shimmering at object edges, and as ever this plasma display is just too good for analogue broadcast images as its quality has a tendency to be unforgiving, displaying every inadequacy in TV pictures.

Audio quality is admirable, probably about the best you'll get without a speaker system – thanks to digital amplification the sounds are cleanly defined and expansive, as well as being particularly potent when the volume is pushed upwards.

The 42PD3000E must stand alongside pioneers offering as the finest Plasmas on the market, and gets an unreserved thumbs-up.



Features: 1,000:1 contrast ratio, ALIS processing, Advanced Noise Reduction, chroma and lumi adjustments, black stretch, film mode, split screen, Nicam Stereo with bass booster, teletext, digital amplification

CONTACT: Hitachi, 0845 758 1455, www.hitachidigitalmedia.com

Editor's CHOICE

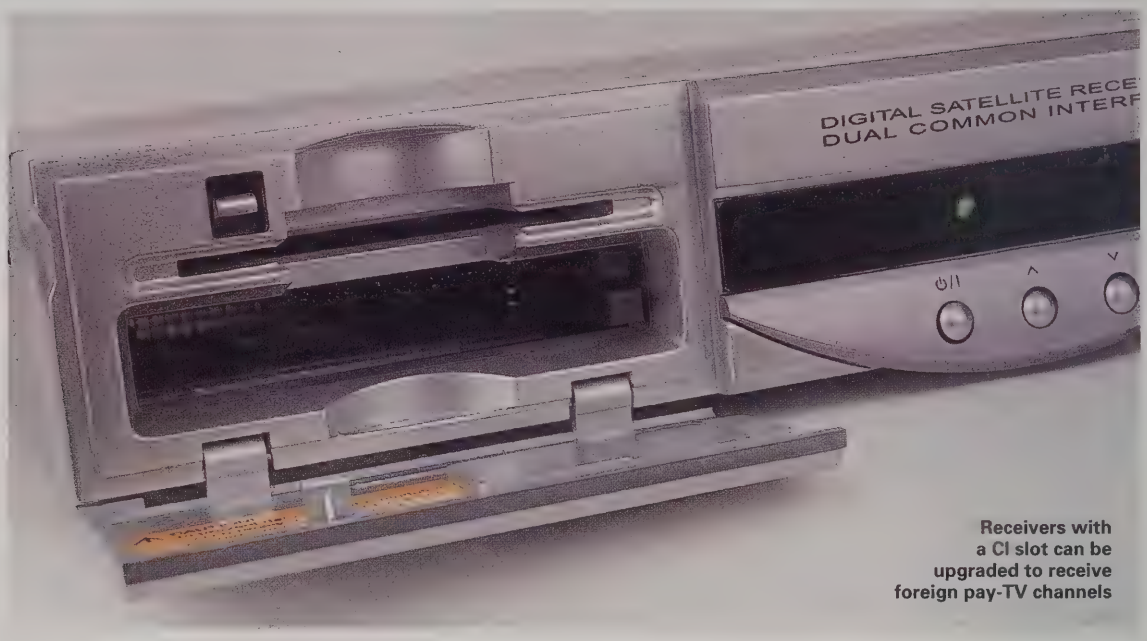
PRICE £4,500

PROS AND CONS

- ⊕ Picture and sound quality, broad feature list
- ⊖ Analogue tuner pictures show their true colours

Buyer's Guide

WHETHER YOU'RE NEW TO DIGITAL TV OR JUST LOOKING TO UPGRADE YOUR EXISTING SYSTEM, OVER THE NEXT 14 PAGES SATELLITE & DIGITAL CHOICE GIVES YOU THE LOWDOWN ON THE EQUIPMENT AVAILABLE



Receivers with a CI slot can be upgraded to receive foreign pay-TV channels

Buying satellite

WHICH SORT OF RECEIVER SHOULD I GET?

Ultimately, this depends on what channels you're after and how much you have to spend. A cheap free-to-air digital receiver like the Technomate TM5000D can be bought for less than £100. A more advanced motorised system like the Strong SRT4375 can be picked up for as little as £400, and is also capable of receiving the rapidly dwindling number of analogue satellite channels such as the German channels on Astra 1. Although outdated, analogue-only receivers can still be found at bargain secondhand prices (usually at car boot sales).

If you just want to receive digital channels from either Hot Bird and the Astra cluster of satellites then a Sky Digibox may suffice, although it does have significant limitations when it comes to receiving channels from other satellites, especially when used in conjunction with the standard 45cm Sky mini-dish (a 60cm dish is preferable). For a start, they cannot be used to receive pay-TV services other than Sky Digital, nor can any receiver other than a Digibox be used to receive Sky, which has its own method of encryption, Videoguard.

If you want foreign pay-TV get a digital satellite receiver with some form of upgradeability such as a common interface (CI) slot for adding a pay TV module (CAM) and viewing card. CAMs (or conditional access modules) are required to unscramble encrypted channels (there are several methods of encryption in use including Viaccess and Irdeto) and are often already built into a receiver. Viewing cards for foreign channels are often bundled with CAMs. Dealers import them and they can be bought on a yearly subscription basis.

A CAM and viewing card

If you want to receive channels from several satellites consider getting either a dish fitted with more than one LNB or a motorised multi-satellite system.

There are two options for motorised users. The traditional (and cable-heavy) motorised dish system requires a motorised receiver incorporating a built-in positioner for turning the dish.

The cheaper path to motorisation is to have is a dish fitted with a DiSEqC 1.2 motorised smart mount (costing around £100) working in conjunction with a digital receiver that features DiSEqC 1.2 dish turning software.

For more on the different types of receivers available see *Get Into Digital* on pages 4 and 5.

WHAT DISH DO I NEED?

If it's free to air channels from Astra 1 or Hot Bird you're after then a typical 'beginner's' setup of a 60cm (80cm if you live in the north or south-west of England, Scotland and Ireland) fixed dish is sufficient, coupled with a single universal LNB. However, it's worth considering a multiple feed bracket, which has usually two LNBs but

Using more than one LNB on your dish will get you more channels

sometimes three or four. These add-ons cost from just £30 and give access to hundreds more free channels.

WHAT ABOUT INSTALLATION?

Unless you're already an experienced satellite enthusiast, we would strongly advise you to consult a satellite dealer in the first instance. They'll be able to give you advice on the type of system that's right for you, help with installation and provide after-sales service.

A professional installer could also even help you with a money-saving 'package' deal if it's foreign pay-TV you're after. Typically, installation costs £40-£80 for a fixed dish taking about half-an-hour to install, but a motorised antenna installation needs a lot of equipment can take two fitters an entire day to set up, which is liable to cost upwards of £150.

More than 1.5 million homes in the UK now have a Freeview-ready box

Buying digital terrestrial

WHAT EQUIPMENT DO I NEED?

Freeview, a non-subscription package of more than 40 TV and radio digital terrestrial channels (see page 99 for details) is freely available to anyone (localised signal circumstances permitting) with a TV aerial and one of the following products.

A basic Freeview set-top box (often referred to as an 'adapter' or 'converter') costs as little as £60 and will happily convert digital TV signals into analogue for viewing on your TV.

Alternatively, you can buy an integrated digital television, or IDTV (essentially a TV with the equivalent of a Freeview adapter built in) which will let you watch Freeview channels while saving you the trouble of buying an extra box. These cost upwards of £400.

ANY FEATURES TO LOOK OUT FOR?

There are a number of key features to look for when buying a Freeview adapter, many of which also apply to IDTVs.

If you want to take advantage of digital text and other 'red-button' interactive services, then make sure the box you buy comes with the necessary MHEG-5 interactive software required to view these services.

Connections are also very important. A box with two Scart connectors makes it easier to create higher quality recordings on a VCR, and the presence of a UHF loopthrough means you can watch analogue channels while you're recording Freeview channels and vice versa.

If you want to listen to stereo sound and are perhaps using a mono television, such as a portable, then it's also worth buying an adapter with audio outputs for connecting up an amplifier and speaker system. This can be expensive, but worthwhile for audiophiles.

CAN I GET A SIGNAL IN MY AREA?

It's estimated that around three-quarters of the UK are able to receive digital terrestrial signals.

Often the position and general state of your aerial can have a significant effect on your chances of getting a good signal. A general rule of thumb is that your aerial should have a clear line of sight (no obstructions such as tall buildings) to your local transmitter and should preferably be roof-mounted rather than stored in the loft.

Your aerial should also be fairly new and in good condition (a high-gain aerial is recommended in weak signal areas). Indoor aerials including those fitted to portable TVs are not suitable for Freeview reception.

Before you rush out and buy an adapter there are a number of ways you can check the quality of DTT reception in your area. If someone you know already has a Freeview adapter ask (nicely) if you can borrow it for testing.

In addition The Digital Television Group has a fairly accurate postcode predictor on its website (www.dtg.org.uk) which will give you an indication of your likely reception situation. Alternatively, see www.freeview.co.uk. In some instances the shop assistant may be able to check your postcode situation for you. You can also phone the ITC technical helpline for advice on 01962 848647.

'A basic Freeview set-top box costs as little as £60 and will happily convert digital TV signals into analogue for viewing on your TV'

System Breakdown

DON'T KNOW YOUR LNB FROM YOUR UHF? SATELLITE & DIGITAL CHOICE PRESENTS A GUIDE TO THE BASICS OF SATELLITE AND DIGITAL TERRESTRIAL SYSTEMS

Satellite

HOW IT WORKS

A lot of high-tech terminology surrounds the use of satellite equipment (all of which is explained in the *Jargon Buster* on page 87). However, the basics of satellite TV reception are easy to understand.

If you live on the edge of an area covered by a satellite's signal – known as the footprint – you'll need a larger dish than if you were at the centre of the beam. The larger your dish, the stronger the signal will be and the better the quality of pictures and sound received will be. This is particularly important with digital signals, where a weak signal means the receiver will not have enough information to produce a picture.

When it is pointed at a satellite the dish collects the weak signals and concentrates them on its focus point, where the LNB is positioned. The LNB converts the signal to an intermediate frequency (IF) for transmission down the cable to the receiver.

Older analogue receivers amplify the IF signal which is then processed into pictures and sound through a combined tuning and frequency-changing operation. A digital receiver decodes the stream of binary data into pictures, sound and any data carried with it. If a channel is encrypted it is diverted through the receiver's decoder before being passed down the cable (or for better quality, a Scart lead) to the TV or VCR.

1. CARD SLOT – Pay-TV channels require a viewing card to unscramble the signal. Some receivers are designed to work with one encryption format; others have a common interface slot which accepts conditional access modules for many different formats. Slots are usually concealed behind a pull down flap at the front of the receiver.

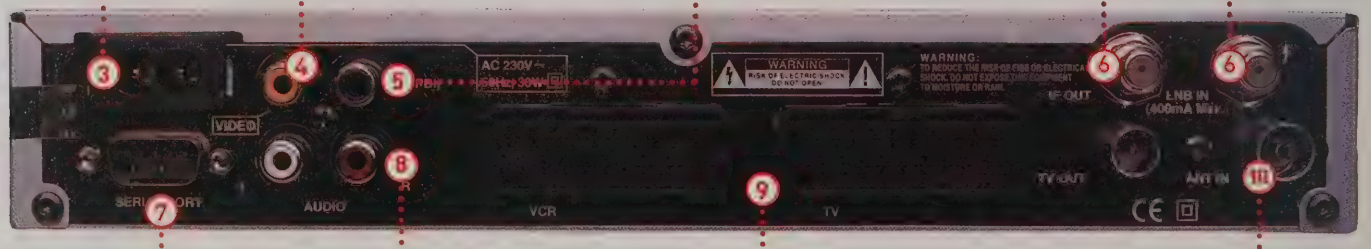
2. BUTTON CONTROLS – Basic function buttons which let you change channels and place the receiver on standby power. Particularly handy if you lose the remote control! They also let you set up features such as the parental lock and event timer – depending on the specification of the receiver.

3. POWER INPUT – Insert power cable here.

4. COMPOSITE VIDEO OUTPUT – Provides a composite video (CVBS) signal to a TV or VCR through a standard phono cable, which is superior to the UHF signal but poorer than the RGB signal through a Scart.

5. DIGITAL AUDIO OUTPUT – Either optical or coaxial, these give you noise free sound and are superior to basic phono inputs. Some receivers support Dolby Digital audio, where broadcast.

6. LNB LOOPTHROUGH – The digital receiver splits the IF signal from the dish and passes it uninterrupted through to an analogue receiver or a Sky Digibox, which can control the LNB when the main receiver is in standby.



7. RS232 SERIAL PORT – Allows the receiver to be linked with a PC to update its software with data downloaded from a bulletin board or the internet.

8. STEREO PHONO OUTPUTS – Analogue outputs pass stereo signals to to a hi-fi or speaker system.

9. SCART SOCKETS – Used to link the receiver to a TV or VCR or decoder. Delivers superior pictures to a UHF or composite output.

10. UHF LOOPTHROUGH – A terrestrial aerial input and a modulator output which allow you to tune your TV to the satellite signal like any TV broadcast. To receive terrestrial channels (analogue only) connect the cables from your aerial to the antenna socket. The TV and VCR must then be connected using co-ax cables

Digital terrestrial

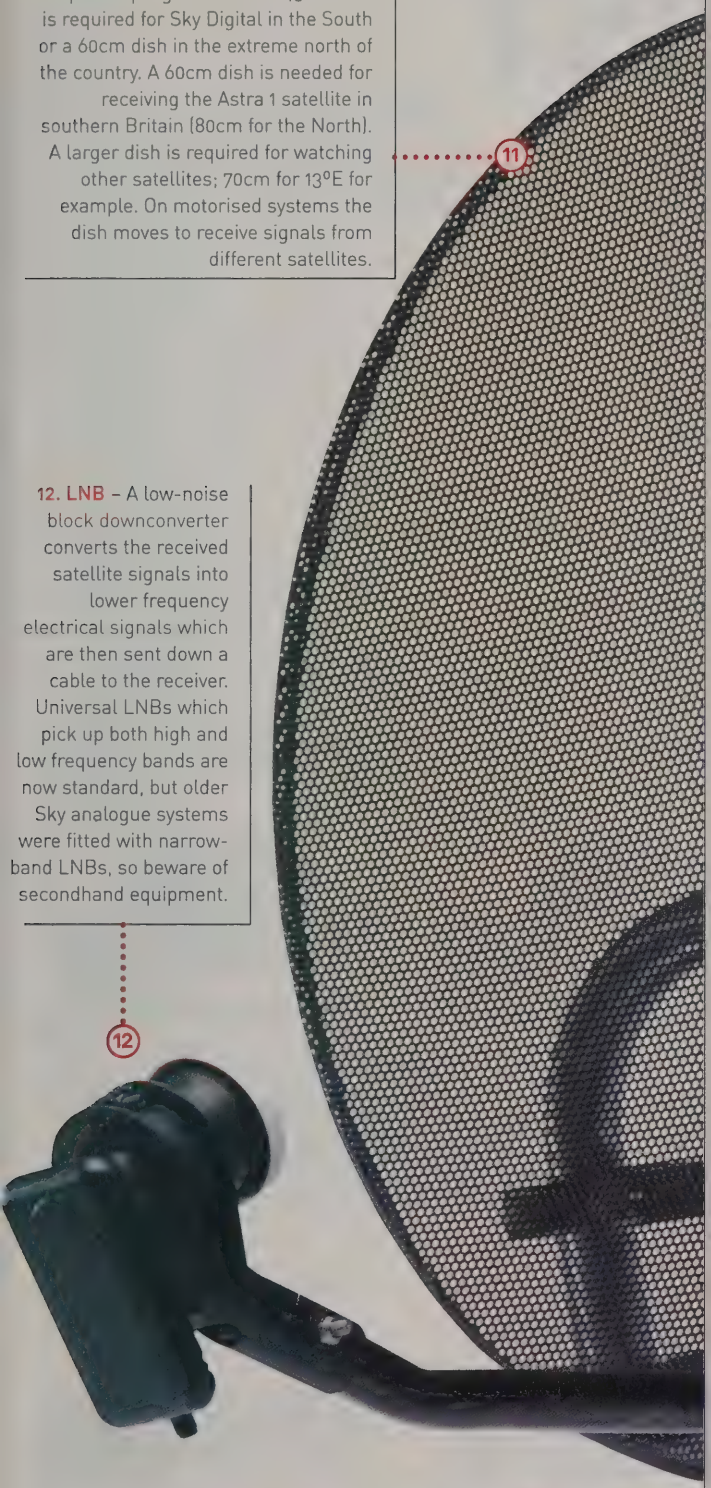
HOW IT WORKS

As with satellite broadcasts, digital terrestrial signals are encoded as a datastream made up of zeros and ones. These signals are transmitted by 'multiplexes' capable of carrying several channels at once in a single frequency (rather than just one channel, as with analogue transmissions). These signals are then distributed by TV transmitters across most of the UK.

The signal is picked up by your TV aerial and sent to your Freeview adapter, which converts the signal into analogue for displaying on your TV.

11. DISH – Points at satellites in the sky and picks up signals. A fixed 45cm dish is required for Sky Digital in the South or a 60cm dish in the extreme north of the country. A 60cm dish is needed for receiving the Astra 1 satellite in southern Britain (80cm for the North). A larger dish is required for watching other satellites; 70cm for 13°E for example. On motorised systems the dish moves to receive signals from different satellites.

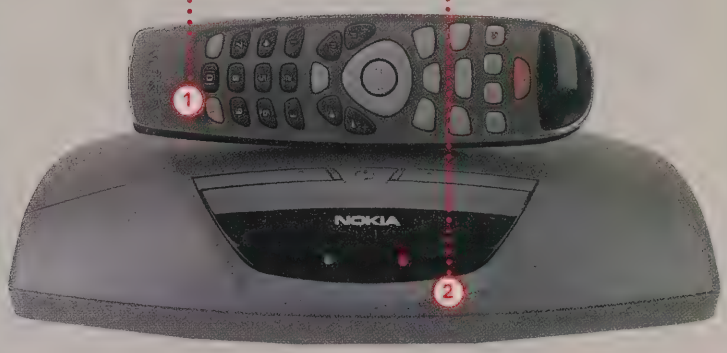
12. LNB – A low-noise block downconverter converts the received satellite signals into lower frequency electrical signals which are then sent down a cable to the receiver. Universal LNBs which pick up both high and low frequency bands are now standard, but older Sky analogue systems were fitted with narrow-band LNBs, so beware of secondhand equipment.



13. REMOTE CONTROL – Similar to a TV remote, but lets you control the satellite receiver's functions.

1. REMOTE CONTROL – Like a satellite receiver, lets you control all of the adapter's functions.

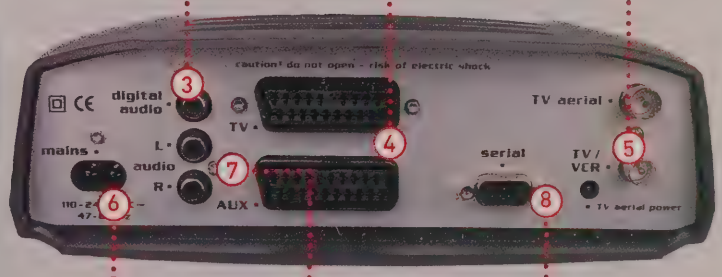
2. CA SLOT – Some adapters conceal a Conditional Access Slot for use with future pay-TV services (should they appear).



3. DIGITAL AUDIO OUTPUT – Either optical or coaxial, gives better audio performance when connected to a hi-fi or speaker system.

4. SCART SOCKETS – Connects the box to a TV or VCR.

5. UHF LOOPTHROUGH – Lets you watch analogue channels while recording Freeview channels.



6. POWER INPUT – Some adapters have a 12V power supply, meaning they can be used in caravans, etc.

7. STEREO PHONO OUTPUTS – Connecting these to a speaker system gives stereo sound.

8. SERIAL PORT – Usually used by engineers, as most software updates are broadcast over the air.

THE KIT LIST

WHATEVER YOUR DIGITAL TV NEEDS, SATELLITE & DIGITAL CHOICE HAS PICKED ITS TOP FIVE PIECES OF KIT IN EACH CATEGORY TO HELP YOU MAKE THE RIGHT DECISION

QUICK GUIDE

- **Sky Digiboxes** – the only receivers capable of receiving Sky's subscription channels
- **Free-to-air digital** – capable of receiving unscrambled free TV signals from a variety of satellites
- **Common interface digital** – a receiver with one or more CI slots capable of receiving scrambled subscription channels when combined with a conditional access module and viewing card
- **Conditional access** – has one or more formats of scrambling technology built in, so only a viewing card is required to pick up compatible channels
- **Dual format** – can receive analogue and digital satellite TV, and may also have a common interface or built-in conditional access
- **Digital/Analogue Motorised Receivers** – receivers which can pick up digital (and occasionally analogue) signals and can also be used as part of an actuator-driven motorised system
- **PC cards** – can receive both analogue and digital satellite or digital terrestrial signals. Some can receiver satellite data only (i.e. the internet)
- **Freeview adapters** – set top box for receiving digital terrestrial channels from a TV aerial
- **IDTVs** – an integrated digital television capable of receiving both analogue and digital terrestrial (i.e. Freeview) channels and, in some cases, Sky Digital

SATELLITE

SKY DIGIBOXES

(NOTE: the prices given here represent the nominal value of a Digibox as quoted by Sky. Market prices are likely to be higher. Satellite & Digital Choice is unable to give a recommended retail price as manufacturers are forbidden by law to set a price) ALSO: Pace Minibox £99

Sky Plus £199 (+ £10 monthly)

Once you have a Sky Plus, you'll wonder how you managed without it. It is essentially an advanced Sky Digibox featuring an integrated personal video recorder (PVR) and a 40GB hard disc. It has two digital tuners which means you're able to watch one channel while recording another or, thanks to a recent software update, two channels at once. The remote is a swish silver evolution of the standard Digibox model and comes with six extra buttons for controlling the PVR: play, pause, fast-forward, rewind, record, and stop.

Like all PVRs, Sky Plus allows you to fast-forward, rewind, pause and instantly access recordings which are recorded in broadcast quality on the hard disc (there are no variable quality settings). There's also a Pause Live TV function where pressing pause initiates recording to the hard disc. Unpausing means you can carry on watching from where you left off (known as timeshifting), so you never miss a thing.

Recordings can be scheduled using the seven-day EPG, and a Series Link function means you can set the receiver to automatically record each episode of your favourite series (if the broadcaster supports this feature). If you run out of hard disc space, recordings can be archived to video tape.

Ownership of Sky Plus requires the installation of a Sky Plus dish fitted with a quad LNB (the two 'spare' feeds can be used in conjunction with two other Digiboxes). There's also a £10 user charge (on top of the Sky subscription) for those who do not subscribe to Sky Premium channels.

Sky constantly updates Sky Plus with new features. Future plans include the ability to remotely programme the receiver using a mobile phone or the internet and adding a TiVo-style programme search function to the EPG. ●●●●●

Amstrad DRX400 £169

While we await the arrival of the Amstrad version of Sky Plus next year, here's the DRX400. It looks good, with its smart silvery fascia, though don't go looking for an optical digital audio output on the rear; only the now-discontinued Sony boxes had those. Performance-wise, loading times are comparable with the best that Panasonic has to offer, although noticeably slower when it comes to loading Sky Active and the EPG than the Pace models, including Sky Plus. Still, an excellent Digibox. ●●●●○

Pace BSkyB2600 £169

This revision of Pace's Digibox has had a makeover, replacing the black and silver of old with a slightly dated-looking white platinum casing. The use of smaller VLSI chips also means the box has seen a decrease in size, although the back panel conforms to the standard spec. It's faster than its closest rival (Panasonic's TU-DSB40) in almost every respect; the EPG Sky Active applications is particularly fast to load. If you're happy with its looks, it's a very good buy. ●●●●○

Panasonic TU-DSB40 £169

The latest incarnation of the tried and trusted Panasonic Digibox lineage bears few surprises in terms of its specificatiion and unchanged looks but, nonetheless, continues the manufacturer's high standards when it comes to making Sky Digiboxes. Most welcome is a full-sized tuner module as opposed to a cheaper Ziff one – good news for those in fringe areas. Socketry is standard for a Digibox and loading times are pleasingly fast, whether changing channels, scrolling through the EPG or loading interactive applications. There's no doubt about it – Panasonic is still the king of Digiboxes. ●●●●●

Thomson DSI4101 £169

Thomson takes over where Grundig left off (it now owns the Grundig factory, where its Digiboxes were made) but the DSI4101 is no mere-rebadging of an old product.

Looks-wise, it's a little too much on the blocky side and not unlike the old Pace models. Connections are standard for a Digibox and performance is up there with the Panasonics of this world.

Field reports suggest that this particular box works in fringe areas, so it may be useful to those on the outskirts of the Astra 2D footprint (home to the BBC's digital channels). ●●●●○

FREE-TO-AIR

(ALSO: Humax F1-Fox £174, ID Digital F20E £139, Manhattan Skyline 1000 £169, Fortec StarDVB-786v2 £130, Televes RSD7235 £165, Triax 260S £129)

Technomate TM-5500D £99

Technomate's ever-growing range of receivers are mainly distinguished by two things: they offer something for everyone, and they're incredibly cheap. The TM-5500D is a replacement for the well-received TM-5000D, a free-to-air receiver that also came in at a wallet-sparing £99.

Apart from a cosmetic upgrade, enhancements for this new version include faster channel searching and scanning, extra flash memory for channel storage plus a low-threshold tuner and a revamped remote control.

DiSEqC 1.2 dish moving software comes pre-loaded and tbe receiver and there's also USALS support for auto locating satellites using a USALS-compatible motor. Satellite searching is quick and the symbol rate range of 1000-4500 should be sufficient for tuning everything.

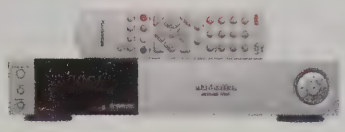
Up to 5,000 channels and 130 satellites can be stored in the memory, and there's a full-screen EPG displaying now-and-next programme info or seven days' information for individual channels where broadcast. Connectors include two Scarts, S-video and composite video outputs, and both stereo audio and optical digital audio outputs and resulting picture and sound quality (particularly from the digital audio output) are both well up to the standard of the previous model. A great budget receiver. ●●●●○

Echostar DSB-707 FTA £160

The DSB-707 contains many of the good things we expect from Echostar. The patented Echonav menu system makes it easy to find channels, choose your AV settings, etc, and every kind of C-band and Ku-band LNB is supported. DiSEqC 1.2 is also supported and its functionality has benefited greatly from a software update. Picture and sound are excellent, and there's support for Dolby Digital audio. ●●●○○

Hyundai HSS-730 £149

DiSEqC 1.2 is included, along with a coaxial digital audio output, three stereo audio and composite video outputs and twin Scart outputs (one RGB). The receiver is plug-and-play if you're picking up Astra and Hot Bird and each satellite can be given different LNB details. You can pick basic DiSEqC commands or commands for a STAB-approved motor, and the satellite scan is quick (Hot Bird was searched in five minutes). ●●●● ☽



Manhattan Skyline 1000 £169

The FTA cousin to the Skyline 3000 (below) is a good buy for novices. The step-by-step setup process is enhanced by easy-to-use menus and there's support for fixed dish systems and those with DiSEqC 1.2 (including USALS). Up to 50 satellites and 5,000 channels can be stored and there's a symbol rate range of 2000-45000. A now-and-next EPG and twin Scarts are just some of the other welcome features of note on this well-rounded FTA receiver. ●●●● ☽

Nokia Mediamaster DVB9450S £199

Nokia's entry-level receiver is easy to use, with looks similar to its old analogue receivers. It stores up to 2,000 channels and has DiSEqC 1.0 switching, with great picture and sound quality, a slick EPG and teletext support. But it lacks many of the features found in receivers of comparable price and quality, such as DiSEqC 1.2 and Satscan motorisation or a digital audio output. ●●●○○

CI DIGITAL

(ALSO: Vortec VS-9000CI £250, Eurobox 9900+CI £249, ID Digital CI-20E £159, Starsat SR-X2000Ci £123, Pixx ADT3500 £199, Technibox CAM 1 Plus £263, BEC DB 6800CIP £299, Triax 262S £159)

Echostar DSB-2200 2CI £249

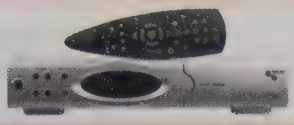
An updated DSB-2200 2CI has had more than just a software update with angled vents and a darker metallic finish. There's now a coaxial digital audio output on the back panel with Dolby Digital AC-3 audio compression supported and the receiver also comes with a Viaccess CAM.

It's easy to set up a single fixed dish, multiple dishes or LNBs selected by DiSEqC, and a DiSEqC 1.2 motorised system (there is also a SMATV option). For each option there are handy signal strength and quality meters, a selection of LNB types, and the reference transponder can be altered easily. The search facility doesn't skimp on options: you can look for all channels, just the free channels, single transponders, or network search for transponders used by the same broadcaster. Up to 100 satellites and 400 channels can be stored.

The new easy-to-use Echonav menu system uses five coloured buttons on the handset which activate corresponding menus on the screen. There's also a full DVB programme information guide and a detailed onscreen information banner. Pictures are crisp and sharp and the audio very clean. In all, a very impressive addition to the Echostar range. ●●●●○

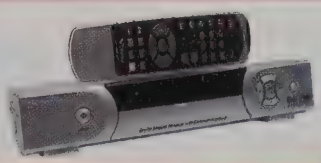
Manhattan Skyline 3000 £199

The 3000 has twin CI slots and has a free-to-air brother in the Manhattan Skyline 1000 (£169). Setup is easy and you can choose between DiSEqC 1.2 and what Manhattan calls DiSEqC 1.3 with USALS, which finds satellites based on a reference satellite. There's memory for 50 satellites and 5,000 channels, and sound and picture are good. ●●●●○



Triax 262S £159

A keenly priced receiver with capacity for 2,000 channels and 59 satellites, and full support for DiSEqC 1.2.
Installation is easy, with the 262S taking about five minutes to scan Hot Bird. It's not perfect; there's no RGB support, and no USALS either. Still, a good buy for newcomers. ●●●○○



Strong SRT4355 Evolufion £165

The SRT4355 supports DiSEqC 1.2 and has two CI slots, two Scart outputs, stereo audio and composite video outputs and an optical output (minus the AC-3 decoder for Dolby Digital). The symbol rate range of 2000-4500 is OK for SCPC and more common MCPC channels. Stores up to 3,200 TV and 1,600 radio channels on 64 satellites. Picture quality is good even with weak signals. ●●●● ☽

Palcom DSL 2100 CI £157.50

The DSL 2100 CI is a great budget starter package for those entering the world of international satellite TV. It has two CI slots (located at the back of the receiver), memory for 2,000 channels and an informative channel scan screen. Other inclusions are a 12-event timer, a built-in teletext viewer with a Tetris-style game and a detailed EPG. Sound is clean and images are exceptionally sharp. An FTA version is available for under £100. ●●●● ☽

CA DIGITAL

(ALSO: Aston Simba 201S/202S £259/£299, Echostar D-2510IP-Viaccess £349, Strong SRT4400/4450 £249/£229, Sagem ISD3400 £269, Samsung DSR 9000 £348, XSat CDTV310 £289, Humax IRCI 5400/VACI 5300 £309, Nokia 210S £249, Xtreme £249)

Force D-Master 1145S £299

The 1145S replaces the well regarded 1122S. The sleek black design remains similar to its predecessor's and features twin CI slots along with Viaccess and Seca CAMs (replacing the original Conax). A cheaper version, the 1144S, is available for £50 less, minus the Conax CAM.

The D-Master is capable of auto locating satellites when used in conjunction with a DiSEqC motor and comes preset for use with a four-way DiSEqC switch. For enthusiasts this arrangement can be expanded using two-level DiSEqC 1.1 for up to 16 fixed LNBS. There's memory for 3,000 channels and 50 satellites and a wide symbol rate range of 2000-45000. An unlimited number of favourites lists can be created and the EPG is capable of displaying up to seven days' worth of programming information where broadcast. Connections include two Scarts, analogue phonos and both coaxial and optical digital audio outputs with AC-3 decoding for Dolby Digital broadcasts as currently featured on some German channels. The lack of manual scanning features may disappoint some enthusiasts, but this revision of the 1122S offers plenty to get excited about. ●●●●○

Echostar DSB-808 2CI £270

Echostar's DSB-808 and its free-to-air partner, the DSB-707 (£160) have the option of an integrated Viaccess CAM, DiSEqC 1.2 motor control, and Dolby Digital audio support. The Echonav menus are fast and there's room for 4,000 channels and 100 satellites with a symbol rate range of 2000-32000. Sound and picture both meet Echostar's high standards. ●●●●○

Nokia Mediamaster DVB9800S £399

Very capable digital satellite receiver with a Viaccess CAM, single CI and DiSEqC 1.2 and Satscan motorisation software. Sleek looks are complemented coaxial digital audio output, but no composite video phono socket. Up to 50 satellites can be controlled and channel management and navigation are among the slickest around. ●●●●○

Delta-Sat 1104IRCI £272

The 1104IRCI has a twin CI, built-in Irdeto CAM, DiSEqC 1.2 control, S-video and digital audio output. What makes it stand out is that the CAM can be re-programmed as an Allcam capable of working with almost every kind of encryption except Videoguard. There's memory for 128 satellites and 5,000 channels, 10 timers and DiSEqC 1.2 support, although there's no auto-locating option. ●●●●○

Manhattan Starlight 6800 £299

Key features on the Starlight are a built-in positioner, DiSEqC 1.2, and an integrated Irdeto CAM along with twin CI slots. It's a slim, attractive receiver with two Scarts, composite video, S-video, stereo audio and a coaxial digital audio output. Locating satellites is easy and the great menu system makes for a good value receiver. ●●●●○

DUAL FORMAT

Strong SRT4375 £329

Strong's flagship receiver is equipped with all the discerning enthusiast could ask; motorised satellite, auto-positioning, twin CI, digital and analogue tuning.

The slim silver case is simple yet elegant, with basic controls, a four-digit display and twin CI slots hidden behind a drawbridge flap. The back has a full range of analogue and digital connectors – four F-connectors, a 12V switch socket, three Scarts, composite video and stereo audio phonos, a serial port, UHF loopthrough, six spring-clips for positioner and mechanical polariser control.

The positioner automatically sets east and west movement limits and find satellites, with capacity for up to 64 orbital locations. Satellites can be added and searched automatically, positioning performed manually and LNBs configured, with DiSEqC 1.0 for switching fixed LNBs.

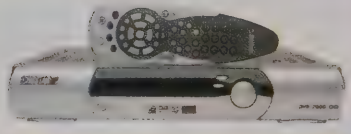
Channel search is quick and thorough, with full EPG and teletext support, and good AV quality. ●●●●○

Echostar AD-3600IP Viaccess £500

The revision of the AD-3000 IP comes with a built-in Viaccess CAM and memory for storage of 5,700 channels and 100 satellites. The new Echonav operating system is easy to use and the pictures are sharp and clear. It comes with built-in AC3 decoding, so it can pass Dolby Digital 5.1 signals to a suitable surround sound receiver. ●●●●○

Strong SRT4250 £249

This excellent silver analogue/digital combo has DiSEqC 1.2 software, but it's only for FTA channels. The rear panel has all the connections you'd expect for a combo, and you can have up to 64 satellites using DiSEqC 1.2. Hundreds of channels are pre-tuned in the analogue section, which has a range of audio and video tuning options. ●●●●○



Echostar DVR-7000 £900

Echostar was one of the first makers to put out a satellite PVR and the DVR-7000 doesn't skimp on features. It has both analogue and digital satellite tuners and memory for 100 satellite and 4,700 channels. There are twin CI slots, a symbol rate range of 2000-3000, three Scarts and DiSEqC 1.0 are all supported and the receiver will also play MP3 music files. The 40GB hard disc should satisfy most users, as should picture and sound quality. ●●●●○

Eurobox 8110-AD+CI £259

This fixed dish analogue/digital receiver has a twin CI. The back panel has the usual AV sockets and four F-connectors, while mechanical polarisers can be attached to three spring-clips. The menus are easy, as is setting up. The receiver supports DiSEqC 1.0 switching, and the analogue tuner uses semi-transparent menus so the effects of threshold extension and video bandwidth can be seen. ●●●●○

DiSEqC 1.2 DIGITAL SYSTEMS

Make and model	Combined analogue	Receiver price	Number of LNB inputs	LNB loopthrough	DiSEqC	22kHz switching	Polariser control	Number of satellite positions	Number of channels	Symbol rate	FEC	SCPC compatible	CAM	Number of card slots	Common Interface	Onscreen display	EPG	Teletext	RS232 interface	Modem output	SCSI output	Number of AV outputs	Stereo audio outputs	UHF tuning range	Comments
Aston Xena 2000	-	£425	1	◆	1.2	◆	Voltage	49	4,000	1800-40000	F	◆	Viaccess	1	2	◆	◆	◆	◆	-	-	3	◆	21-69	Flexible analogue combo that picks up almost anything
Aston Simba	-	£259	1	◆	1.2	◆	Voltage	50	3,000	1800-40000	-	◆	Seca/ Viaccess	2	2	◆	◆	◆	-	-	-	2	◆	21-69	Very easy to use pay-TV receiver
Delta-Sat 1104IRCI	-	£272	1	◆	1.2	◆	Voltage	128	5,000	2000-45000	F	◆	Irdeto/ Allcam	1	2	◆	◆	◆	◆	-	-	3	◆	21-69	Large memory and programmable CAM. No auto positioning
Digiquest P1000	-	£269	1	◆	1.2	◆	Voltage	50	1,000	2000-32000	S	◆	-	0	2	◆	◆	◆	◆	-	-	2	◆	21-69	TPS customisation of fixed dish model
Echostar DSB1100	-	£249	1	◆	1.2	◆	Voltage	50	1,500	2000-32000	S	◆	-	0	0	◆	◆	◆	◆	-	-	2	◆	21-69	Excellent FTA receiver
Echostar DSB-707 FTA	-	£260	1	◆	1.2	◆	Voltage	50	1,500	2000-32000	S	◆	-	0	0	◆	◆	◆	◆	-	-	2	◆	21-69	Good features but limited DiSEqC control
Echostar DSB808 Viaccess	-	£270	1	◆	1.2	◆	Voltage	100	4,000	2000-32000	S	◆	Viaccess	1	0	◆	◆	◆	◆	-	-	2	◆	21-69	Sleek-looking, but basic DiSEqC control
Echostar DSB2110 2Ci	-	£299	1	◆	1.2	◆	Voltage	50	2,000	2000-32000	S	◆	-	0	2	◆	◆	◆	◆	-	-	2	◆	21-69	Version of DSB1100 with CI - Viaccess model available
Force D-Master 1145S	-	£299	1	◆	1.2	◆	Voltage	36	5,000	2000-45000	F	◆	Viaccess Conax	2	2	◆	◆	◆	◆	-	-	2	◆	21-69	Excellent successor to the 1122S but not an enthusiast's machine
Force D-Master 20445	-	£399	1	◆	1.2	◆	Voltage	36	5,000	1000-30000	S	◆	Viaccess	2	2	◆	◆	◆	◆	-	-	2	◆	21-69	Great DVD/Sat combo with bonus Viaccess CAM
Force D-Master 20555	-	£449	1	◆	1.2	◆	Voltage	36	5,000	1000-30000	S	◆	Viaccess Conax	2	2	◆	◆	◆	◆	-	-	2	◆	21-69	Same as 20445,but with Viaccess and Conax CAMs
Fortec Star DVB-786v2	-	£130	1	◆	1.2	◆	Voltage	50	3,000	2000-45000	F	◆	-	0	0	◆	◆	◆	◆	-	-	3	◆	21-69	Very easy to use, but it can be slow to lock on
Humax F1-Fox	-	£229	1	-	1.2	◆	Voltage	16	2,000	2000-31000	S	◆	-	0	0	◆	◆	◆	◆	-	-	2	◆	-	Compact, high-performance FTA receiver
Humax IRCI5400	-	£319	1	◆	1.2	◆	Voltage	16	4,000	2000-31000	S	◆	Irdeto	1	2	◆	◆	◆	◆	-	-	2	◆	21-69	Excellent user-friendly receiver with Irdeto pay-TV module
Humax VACI 5300	-	£295	1	◆	1.2	◆	Voltage	16	4,000	2000-31000	S	◆	-	0	2	◆	◆	◆	◆	-	-	2	◆	21-69	Excellent receiver but tricky DiSEqC 1.2 controls
Humax IR-Fox	-	£169	1	◆	1.2	◆	Voltage	32	2,000	1000-45000	S	◆	Irdeto	1	0	◆	◆	◆	◆	-	-	2	◆	21-69	Great value receiver with Irdeto but over-complicated motor control
Humax PVR-8000	-	£420	1	◆	1.2	◆	Voltage	32	4,000	1000-45000	S	◆	-	-	2	◆	◆	◆	-	-	-	2	◆	21-69	Excellent value free-to-air personal video recorder
Hyundai HSS 800CI	-	£249	1	◆	1.2	◆	Voltage	32	3,000	2000-31000	S	◆	-	0	2	◆	◆	◆	◆	-	-	2	◆	21-69	Fully functioning DiSEqC system
ID Digital CI-20E	-	£159	1	◆	1.2	◆	Voltage	32	3,000	2000-31000	S	◆	-	0	2	◆	◆	◆	◆	-	-	2	◆	21-69	CI receiver with good performance and features
ID Digital F-20E	-	£139	1	◆	1.2	◆	Voltage	32	3,000	2000-31000	S	◆	-	0	0	◆	◆	◆	◆	-	-	2	◆	21-69	Free-to-air version of thr CI-10E
Manhattan Starlight 6800	-	£299	1	◆	1.2	◆	Voltage/ current/pulse	135	5,000	2000-45000	F	◆	Irdeto	2	2	◆	◆	◆	◆	-	-	4	◆	21-69	Well-featured, with an auto locating built-in positioner
Manhattan Skyline 3000	-	£199	1	◆	1.2	◆	Voltage/ current/pulse	50	5,000	2000-45000	S	◆	-	0	2	◆	◆	◆	◆	-	-	2	◆	21-69	Full DiSEqC controls. Confusing auto scan options
Nokia 210S	-	£249	1	-	1.2	◆	Voltage	50	3,000	1000-45000	F	-	Viaccess	1	1	◆	◆	◆	◆	-	-	2	◆	21-69	Stunning pictures, excellent menus, needs better DiSEqC control
Pixx ADT3500	-	£199	1	◆	1.2	◆	Voltage	16	2,000	1000-45000	S	◆	-	0	2	◆	◆	-	◆	-	-	2	◆	21-69	Simple multi-satellite receiver
Pixx ADT8310	-	£250	1	◆	1.2	◆	Voltage	16	2,000	1000-45000	S	◆	-	0	2	◆	◆	◆	◆	-	-	2	◆	21-69	DVD/Sat combi but DVD portion could be better
Samsung DSR9500	◆	£249	1	◆	1.2	◆	Voltage	35	4,000	2000-45000	S	◆	Viaccess	2	2	◆	◆	◆	◆	-	-	2	◆	21-69	Excellent AV features but some software bugs
Samsung DSR9400	◆	£129	1	-	1.2	◆	Voltage	32	4,000	2000-45000	F	-	-	0	0	◆	◆	◆	◆	-	-	2	◆	21-69	A fast and well-designed FTA receiver
Starsat SR-X40Ci	◆	£220	1	◆	1.2	◆	Voltage/ Current/Pulse	50	2,000	2000-32000	S	◆	-	0	2	◆	◆	◆	◆	-	-	3	◆	21-69	Budget multi-satellite receiver but tricky to set up
Starsat SR-X2000 Ci Plus	-	£123	1	◆	1.2	◆	Voltage	32	6,000	1000-45000	S	-	-	0	2	◆	◆	◆	◆	-	-	3	◆	21-69	Lots of great features but you can't add new satellites
Strong SRT4300	-	£279	1	◆	1.2	◆	Voltage	50	1,000	2000-45000	S	◆	-	0	2	◆	◆	◆	◆	-	-	3	◆	21-69	Flexible enthusiast's machine
Strong SRT4250	◆	£299	3	◆	1.2	◆	Voltage	50	1,000	2000-45000	S	◆	-	0	0	◆	◆	◆	◆	-	-	3	◆	21-69	Budget analogue/ digital combo
Strong SRT4355	-	£165	1	◆	1.2	◆	Voltage	64	3,200	2000-45000	S	◆	-	0	2	◆	◆	◆	◆	-	-	2	◆	21-69	User-friendly, but no satellite auto location feature
Televes RSD7235	-	£165	1	-	1.2	◆	Voltage	16	2,000	1000-45000	F	-	-	0	2	◆	◆	◆	◆	-	-	2	◆	21-69	Limited menus, but offers full DiSEqc 1.2 control
Topfield TF5000PVR	-	£479	1	◆	1.2	◆	Voltage	57	5,000	1000-45000	S	◆	-	-	2	◆	◆	◆	◆	-	-	2	◆	21-69	Excellent satellite PVR with 80GB hard disc and twin tuners
Triax DVB 2605	-	£129	1	◆	1.2	◆	Voltage	59	2,000	1000-45000	S	◆	-	0	0	◆	◆	◆	◆	-	-	2	◆	21-69	Good performing FTA receiver but lacks RGB and USALS
Triax DVB 2625	-	£159	1	◆	1.2	◆	Voltage	59	2,000	2000-45000	S	◆	-	0	2	◆	◆	◆	◆	-	-	2	◆	21-69	CI version of the 2605.Simple to use, good value for money
Xtreme	-	£249	1	◆	1.2	◆	Voltage	60	9,000	1000-45000	S	◆	UCAS	1	2	◆	◆	◆	◆	-	-	2	◆	21-69	A massive memory and a Magic CAM. Excellent value

DIGITAL RECEIVERS

Make and model	Combined analogue	Receiver price	Number of LNB inputs	LNB loopthrough	DiSEqC	22KHz switching	Polariser control	Symbol rate range	FEC	SCPC compatible	CAM	Number card slots	Common Interface	Onscreen display	EPG	Teletext	RS232 interface	Modem output	SCSI output	Number AV outputs	Stereo audio outputs	UHF tuning range	Comments
Amstrad DRX400	-	£169	1	-	-	-	Voltage	20000-27500	S	-	Videoguard	1	0	◆	◆	◆	◆	◆	-	2	◆	21-69	One of the fastest Digiboxes around ●●●●○
Aston Xena 1500	-	£399	2	◆	1.0	◆	Voltage	20000-45000	S	◆	Viaccess, Seca	2	1	◆	◆	◆	◆	-	-	3	◆	21-69	Best for scrambled services No PID entry ●●●○○
Benjamin DB6600CI	-	£240	1	◆	1.0	◆	Voltage Current	2000-45000	S	◆	-	0	2	◆	◆	◆	◆	-	-	2	◆	21-69	Easy-to-use basic CI receiver ●●●○○
Grundig GDS300	-	£169	1	-	-	◆	Voltage	22000-27500	S	-	Videoguard	1	0	◆	◆	◆	◆	◆	-	2	◆	21-69	Price includes mini-dish. ●●●○○
Eurobox 9900V+CI	-	£249	1	◆	1.0	◆	Voltage	2000-35000	S	◆	Viaccess	2	1	◆	◆	◆	◆	-	-	2	◆	21-69	Comprehensively featured budget receiver ●●●●○
Micronik TV Box 1000S	-	£319	1	◆	1.0	◆	Voltage	2000-45000	S	◆	- -	4	0	◆	◆	◆	◆	-	◆	4	◆	-	Plug-in Irdeto CAM and multiple CI modules available ●●●●○
Nokia DVB 9600S	-	£380	1	-	1.0	◆	Voltage	1000-45000	S	◆	-	1	0	◆	◆	◆	◆	-	-	3	◆	-	Great picture and sound, but clumsy to use with a multi-satellite system ●●●○○
Nokia DVB 9800S	-	£500	1	-	1.0	◆	Voltage	1000-45000	S	◆	Viaccess	1	1	◆	◆	◆	◆	-	-	2	◆	21-69	Follow-up to 9600, with Viaccess, a CI slot and digital audio outputs ●●●●○
Pace 2600 BSkyB	-	£169	1	-	-	-	Voltage	2200-27500	S	-	Videoguard	1	0	◆	◆	◆	◆	◆	-	2	◆	21-69	Looks could be better, but this is still the speediest Digibox you can get ●●●●○
Palcom DSL-2100 CI	-	£157	1	-	1.0	-	Voltage	4000-45000	-	◆	-	0	2	◆	◆	◆	◆	-	-	2	◆	-	Entry-level receiver with a keen price and lots of useful features ●●●○○
Panasonic TU-DSB31	-	£169	1	-	-	-	Voltage	22000-27500	S	-	Videoguard	2	0	◆	◆	◆	-	◆	-	2	◆	21-69	A bit ugly, but still a very fast receiver ●●●●●
Philips DSI175B	-	£430	1	◆	1.0	◆	Voltage	27500	F	◆	Seca	1	0	◆	◆	◆	◆	-	◆	2	◆	21-69	User-friendly, but quirky multi-satellite facilities ●●●○○
Praxis Pocketsat 9500	-	£225	1	◆	1.0	◆	Voltage	2000-45000	S	◆	-	0	0	◆	◆	◆	◆	-	-	0	◆	21-69	Pocket-sized modular FTA receiver ●●●●○
ProDX 3300A	-	£329	2	◆	1.0	◆	Current, Voltage	2000-45000	S	◆	-	0	0	◆	◆	-	◆	-	-	3	◆	21-69	Basic digital system with analogue features ●●●○○
RSD ODM300-CI	-	£299	1	-	1.0	◆	Voltage	2000-45000	S	◆	-	1	0	◆	◆	◆	◆	-	-	2	◆	30-45	User-friendly enthusiast's system ●●●●○
Sagem ISD3100	-	£249	1	◆	1.0	◆	Voltage	2000-30000	S	◆	Seca	1	0	◆	◆	◆	◆	-	-	3	◆	21-69	Better suited to pay-TV than enthusiast's use ●●●●○
Sagem ISD3400	-	£269	1	◆	1.0	◆	Voltage	2000-30000	S	◆	Seca	1	0	◆	◆	◆	◆	-	-	2	◆	21-69	Pay-TV receiver with OpenTV software ●●●○○
Sony VTX-S760U	-	£169	1	-	-	◆	Voltage	22000-27500	S	-	Videoguard	2	-	◆	◆	◆	-	◆	-	3	◆	21-69	A speedy and very good-looking Digibox ●●●●●
Strong SRT4350	-	£299	1	◆	1.0	◆	Voltage	2000-45000	S	◆	-	0	2	◆	◆	◆	◆	-	-	2	◆	21-69	Easy-to-use digital FTA system ●●●●●
Strong SRT4400	-	£299	1	◆	1.0	◆	Voltage	2000-45000	S	◆	Viaccess	2	2	◆	◆	◆	◆	-	◆	2	◆	21-69	Pay-TV receiver with Viaccess and twin Common Interface ●●●●●
Strong SRT4450	-	£259	1	◆	1.0	◆	Voltage	2000-45000	S	◆	Viaccess	2	0	◆	◆	◆	◆	-	◆	2	◆	21-69	Viaccess-only version of SRT4400 ●●●●○
Vortec VS9800CI	-	£250	1	◆	1.0	◆	Voltage	2000-31000	S	◆	-	2	0	◆	◆	◆	◆	-	-	3	◆	21-69	Successful first Samsung venture into digital satellite ●●●○○
XCom CDTV200	-	£395	1	◆	-	◆	Voltage	15000-30000	S	◆	Viaccess	1	0	◆	-	-	-	-	-	3	◆	-	System aimed at TPS, ABsat and Arabesque ●●●●○
Technisat CAM1 Plus	-	£222	1	-	1.1	-	Voltage	2000-45000	F	◆	-	0	2	◆	◆	◆	◆	-	-	2	◆	21-69	Capable CI receiver, but has a digital audio output ●●●●○
Televés RSD 7255	-	£179	1	◆	1.0	◆	Voltage	1000-45000	S	◆	-	0	0	◆	◆	◆	◆	-	-	2	◆	21-69	Basic budget, FTA receiver ●●●○○
Triax DB 65S	-	£249	1	◆	1.0	◆	Voltage	2000-45000	F	◆	Viaccess	1	2	◆	◆	◆	◆	-	-	3	◆	21-69	Great value Viaccess receiver. Also has USB and digital audio outputs ●●●●○

KEY TO DIGITAL RECEIVERS

To watch digital channels you need a DVB-compliant system instead of a conventional analogue receiver. A blob in a column indicates that the receiver has the feature.

Adjustments are V (variable – they can take any value within a range), S (switchable – they take one of a number of discrete values) or F (fixed – they can't be altered).

Other column headings are:

Receiver price: Digital receivers are typically sold without a dish as it is assumed that buyers have an antenna for analogue TV reception.

CAM: The Conditional Access Module provides the crucial conditional access technology required to decode the scrambled signals broadcast by the service provider.

DiSEqC: This facility enables you to control up to four LNBs (or dishes) from one LNB input.

FEC: Digital channels use differing Forward Error Correction rates (redundancy information signals added to digital signals to detect and correct typical errors which occur during transmission). Selectable FEC is ideal.

SCPC-Compatible: Some digital channels use a whole transponder's capacity, known as Single Channel Per Carrier. Your digital receiver should ideally have this facility.

Symbol rate range: The rate varies from channel to channel. Most use 27500, but they do vary.

Number card slots: Digital receivers require a suitable DVB viewing card to be inserted.

Common Interface: This enables several CAMs to be used for reception of several digital channel packages.

EPG: Some receivers have access to an electronic programme guide for programme information.

Teletext: If the receiver has a teletext option, you will be able to access normal text pages.

RS232 port: Used to attach a computer printer or other peripherals to the receiver.

Modem output: Used to attach a telephone modem for accessing interactive services, when they are offered by broadcasters in the future.

SCSI output: High-speed data interface to allow you to link a CD-Rom, CD player and video CDs in future.

DIGITAL/ANALOGUE MOTORISED RECEIVERS

Make and model	Combined analogue	Receiver price	Number of LNB inputs	LNB loopthrough	DiSEqC	22KHz switching	Polariser control	No of satellite positions	No of channels	Symbol rate	FEC	SCPC compatible	CAM	Number card slots	Common Interface	Event timer	EPG	Teletext	RS232 port	Video bandwidth	Number AV outputs	Stereo audio outputs	Digital audio outputs	UHF tuning range	Comments
BEC DB-6800 CIP	-	£299	1	◆	1.2	◆	Pulse/ Current/Voltage	40	2,000	2000-45000	F	◆	-	0	2	◆	◆	◆	◆	-	2	◆	-	21-69	Bargain, if now ageing, multi-satellite receiver ●●●●○
Echostar AD3000IP	◆	£499	3	◆	1.0	◆	Pulse/ Current/Voltage	50	4,000	2000-45000	S	◆	-	0	2	◆	◆	◆	◆	-	3	◆	-	21-69	Excellent analogue/digital combo. Optional Viaccess model available ●●●●○
Echostar AD3600IP	◆	£499	2	◆	1.0	◆	Pulse/ Current/Voltage	100	5,700	2000-32000	S	◆	Viaccess	1	2	◆	◆	◆	◆	-	3	◆	◆	21-69	Combined system with dynamic but complex Echonav menus ●●●●○
Echostar DVR-7000	◆	£900	2	◆	1.0	◆	Pulse/ Current/Voltage	100	4,700	2000-32000	S	◆	Viaccess	1	2	◆	◆	◆	◆	-	3	◆	◆	21-69	Combo with 40GB PVR. Expensive, though ●●●●○
Echostar D2510IP Viaccess	-	£449	1	◆	1.0	◆	Pulse/ Current/Voltage	50	5,000	2000-45000	S	◆	Viaccess	1	2	◆	◆	◆	◆	-	3	◆	◆	21-69	Versatile multi-satellite receiver ●●●●○
Manhattan Starlight 6800	-	£299	1	◆	1.2 USALS	◆	Pulse/ Current/Voltage	50	5,000	2000-45000	S	◆	Irdeto	1	2	◆	◆	◆	◆	-	2	◆	◆	21-69	Simple but dynamic multi-satellite receiver ●●●●○
Strong SRT4375	◆	£399	3	◆	1.0	◆	Pulse/ Current/Voltage	64	3,000	2000-45000	S	◆	-	0	2	◆	◆	◆	◆	-	3	◆	-	21-69	Top-notch analogue/ digital system ●●●●○
Topfield TF3000CIP	-	£299	1	◆	1.2	◆	Pulse/ Current/Voltage	8	4,000	2000 45000	S	◆	-	0	2	◆	◆	◆	◆	-	2	◆	-	21-69	Cheap, but rather basic multi-satellite multi-satellite receiver ●●●●○
Technomate TM-5500 DAPCI	◆	£209	1	◆	1.2 USALS	◆	Pulse/ Current/Voltage	130	5,000	2000-45000	S	◆	-	-	2	-	◆	◆	◆	-	3	◆	-	21-69	Inexpensive, user-friendly combo. Good performance ●●●●○

KEY TO DIGITAL/ANALOGUE MOTORISED RECEIVERS

Viewing programmes from more than one satellite will usually require a motorised system. This includes a moving dish able to point to the positions of the satellites in the sky and a positioner, which will be available as a seperate unit or, more commonly, integrated with the receiver.

As the receiver has to deal with a variety of frequency bands, audio modes and broadcasting standards, it has to be more versatile and flexible than most of the receivers designed to receive signals from the Astra satellite alone.

Number of channels – There are now an enormous number of TV channels radio stations broadcasting by satellite.

Number of satellite positions – The more positions, the better. A figure under 20 may mean that not every satellite can be programmed with the positioner.

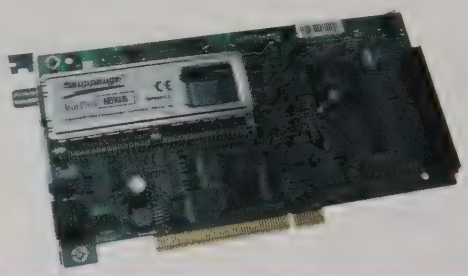
Video bandwith – Applicable to receivers with analogue capability. By reducing the bandwith, sparklies (small black and white flecks which appear on weak pictures) can be eradicated. Either F (fixed and not capable of reduction), S (switchable or better), or V (variable).

DiSEqC 1.2 – Dish-moving software system that controls a dish using an electrical current and is cheaper than a conventioned motorised system.

External switch output – Programmable 5V to 12V output to trigger an external LNB switch.

Polariser control – Polarisers are controlled by either pulse (servo motor), current (magnetic), or voltage (combined LNB polarisers of the Marconi type).

PC CARD DIGITAL RECEIVERS

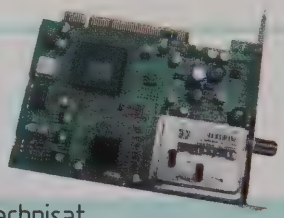


Hauppauge Win TV Nexus-s £199

The successor to the WinTV DVB-s retains many of its predecessor's features, including an expansion slot for a common interface board, an onboard MPEG-2 decoder and and an internal soundcard connector and loopthrough for your CD-ROM's audio output.

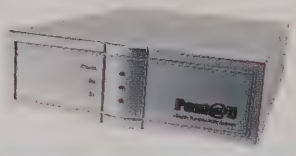
You can have up to four LNBs connected to the card through a DiSEqC switch, and there's a comprehensive list of satellites to choose from. However, there's no DiSEqC for genuine multi-satellite. Astra 1 and Hot Bird are pre-programmed and it's easy to scan for new channels. If you know that new transponders are online – or you want to add a new satellite – you can alter the underlying configuration files using Notepad. Because it's also a data receiver, the Nexus-s is pre-programmed for Europe Online and T-DSL.

Key changes over the WinTV DVB-s are in the new TV viewing software. There are no Windows-style menus (File, Edit, etc) but icons for Scan, Setup, EPG, Options and Help, a programme list (also viewable as a favourites list), volume and channel toggles, record and time-shift controls, and a now-and-next EPG. All these are arranged round the central picture, but you can view as full-screen or as an overlay without any controls around it. Picture quality is excellent even at high res (1024x768), improving on the WinTV DVB-s. ●●●●○



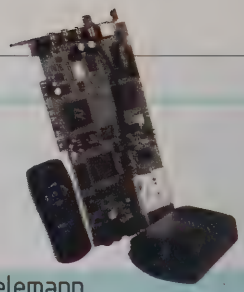
Technisat Skystar 2 PVR £89

The upgraded Skystar 2 adds a DVB viewer and PVR software, allowing recording to the hard disc in MPEG2 format. Record on the fly, pause images, and play back MPEG2, Divx, AVI and M2V files. You can also manually set recordings or use the EPG. Supports Dolby Digital AC-3 decoding, fave channel lists and DiSEqC switching. ●●●●○



Pentamedia PentaU £239

An external data-only unit with the convenience of a USB connection to your computer. It has an identical interface to the Pent@vision, but without TV reception. There's a long list of satellites, and by default all transponders are set up for a universal LNB, but all tuning details can be easily changed. ●●●●○



Telemann Skymedia 200 £299

This flexible card comes with a remote control and smart card reader. Setting up satellites and tuning channels is easy, but the channel and favourites lists are unwieldy. Pictures are reasonable, but there's no EPG or teletext support. The data application is easy to use and reliable. ●●●○○

Twinham Visionplus VP-1030 £125

The Visionplus is the first satellite PC card we've seen with the ability to drive a motorised dish, including support for basic DiSEqC 1.2 and USALS motor control. It also has a CI slot that's compatible with all current types of encryption, except Sky's Videoguard. ●●●●○

ACCESSORIES

Phantom PVR £25

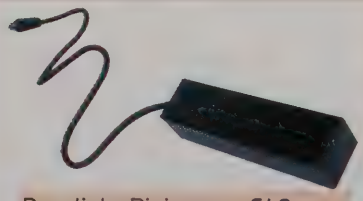
Programming timed recordings using the Personal Planner on your Digibox has previously been the preserve of Sky Plus users. Not any more, however.

The Bluedelta Phantom PVR is a useful gadget that lets your record programmes onto your VCR using the Personal Planner without having to set the VCR timer beforehand. It's a small box that plugs into the Digibox VCR Scart and has a magnetic base which enables it to be stuck to the side of your VCR or Digibox.

When you set the Digibox Personal Planner to autoview a programme it takes the VCR Scart pin 8 high which tells the Phantom to turn on the VCR, select the satellite input and press record – all using infrared commands as though the VCR handset were being used. Any number of programmes set to Autoview in the Personal Planner can be recorded in this way. Granted, a VHS tape doesn't have the capacity of a 40GB hard disc, but the Phantom PVR is still a great to achieve some of the functionality from your Digibox currently enjoyed by owners of Sky Plus without needing to pay a £10 subscription for the privilege. Contact Digital Sales 01257 471 204. ●●●●●

Invoca 8-in-1 Deluxe £80

Invoca is a universal remote control that is programmed to respond to voice commands. It's easy to program and works surprisingly well (if you speak clearly). Macros can also be set up (allowing you to, say, turn on your receiver select a channel and turn up the volume just by saying a word). ●●●●○



Pacelink Digimemo £49

The Pacelink Digimemo is a useful gadget that brings your Digibox out of standby in the event of a power cut. Powered by the 9V output available at your Digibox's 9V output socket, the Digimemo can select pre-determined channels from your Favourites list and there are customised units to select radio stations or 'Other' channels. ●●●○

Lacuna Sat Meter 2 £265

An excellent tool for performing digital satellite installations, the Sat Meter 2 has memory for 13 satellite positions, and can be used for motorised installations. A small LED readout displays signal strength and picture quality and the meter has an internal rechargeable battery pack for two hours' continuous use. ●●●●○

Sky Gamepad £19.99

A familiar games console, with an eight-way direction pad, four coloured operating buttons, and buttons for Select, Help and Back Up. Beneath are two trigger buttons. It's infrared and uses a remote sensor that plugs into the serial port on your Digibox. Up to four controllers can be used per Digibox. Call Sky Buy on 0870 555 111. ●●●○○

DIGITAL TERRESTRIAL

FREEVIEW ADAPTERS

Pace Twin Digital TV Recorder £349

The first combined personal video recorder (PVR) and digital terrestrial receiver on the market, also features a twin DTT tuner which means you can record one Freeview channel while watching another. It has a modest 20GB hard disc which is capable of storing around 10 hours of TV and radio programmes and you can schedule recordings either with the EPG or using manual timer option. Recordings can be rewound and fast forwarded at up to 64x normal speed and easily archived to your VCR afterwards if needs be to save on disc space altough there are no options for setting recording quality.

As with many PVR products, there's there's an ever-handy pause live TV option which carries on recording what you watch after you press the pause button so you never miss a thing.

Both picture and sound quality are excellent and a recent software update added MHEG-5 support for using interactive services/digital teletext.

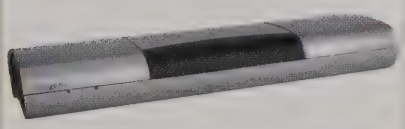
Granted the current lack of a seven-day programme information for DTT channels may limit the Pace Twin in comparison to Sky Plus, but when you factor in the absence of subscription fees or a satellite dish, you're still looking at one of the best PVRs on the market. An excellent product with very good picture and sound quality to boot. ●●●●●

Nokia 221T £130

This is one of most feature-packed Freeview adapters around. The stylish scrolling Navibar menu system is where you can choose from a range of options, including picking favourites, configuring the picture, setting the eight event timer and playing one of the games. Picture and sound quality are exceptional (the 221 T has a more sensitive tuner than most adapters), interactivity is fully supported and there's a whole range of connectors. ●●●●●

Thomson DTI1000 £99

The DTI1000 sports a compact, set-top friendly design but still manages to cram in lots of useful features. Two Scarts and a UHF loopthrough make it easy to record digital channels while watching analogue, and there's a well-organised now-and-next EPG. Other features include an eight event manual timer. Pictures and sound are good and Interactive services and digital text are blisteringly quick to load. ●●●●○



Netgem i-Player £130

This Freeview adapter can also be plugged into your phone line and used to surf the internet and send email at local call rates. It has a full range of connectors, namely two Scarts, UHF loopthrough, optical digital/ analogue audio outputs, a 56k modem, and a USB port (for use with a printer or webcam) along with a very intuitive menu system. Pictures and sound are first rate, and an infrared keyboard is also included. ●●●●○

Hauppauge DEC-2000 £130

PC owners wanting to get into digital TV recording on the cheap should consider this versatile little Freeview adapter which can also be plugged into your PC and used to record programmes on to the hard disc (an hour's recording takes up about 1.6GB of drive space). You can also watch recordings from the beginning as they are being made. Lacking in connectivity but a handy device in terms of features and design. ●●●○○

KEY TO FREEVIEW ADAPTERS/IDTVs

The phrase digital terrestrial TV (DTT for short) refers to digital TV and radio channels that can be picked up using most ordinary TV aerials. Digital signals (carried by 'multiplexes') are sent by your local TV transmitter and converted into analogue by your set-top box or IDTV for displaying on your TV.

At present all such channels (collectively known as Freeview) are free-to-air and therefore do not require a subscription in order to view. However, it is anticipated that other subscription or pay-per-view digital terrestrial services will start to appear in the near future.

Analogue UHF loopthrough: Passes standard analogue PAL TV signals to a TV or VCR.

Auto scan: Set-top box will automatically scan full range of UHF frequencies from channels 21-69 for digital multiplexes.

Common interface slot: Like many satellite receivers, some DTT boxes and TVs come with common interface (CI) slots for inserting de-encrypting conditional access modules and viewing cards required in order to view encrypted pay-per-view digital terrestrial services (although, at present, no such services exist).

Digital audio output: Usually either optical or coaxial this delivers superior audio performance to analogue outputs (ie stereo phonos) when connected to a speaker system. Ideal for radio listeners.

Event timers: Set-top box can be turned on to a given channel, to synchronise with VCRs.

EPG: Uses the DVB 'electronic programme guide' standard for now-and-next onscreen listings information

Hard disc size: Adapters like the Pace 'Twin' are also personal video recorders (PVRs), allowing you to record programmes on to an internal computer-style hard disc.

Letterbox: Displays widescreen broadcasts in a cinema-style 'black bordered' form.

Manual scan: User can set a frequency to scan for a digital multiplexes.

MHEG-5: Supports the software used by UK channels for digital text and other interactive services.

Modem: Some Freeview adapters, like the Netgem i-Player, feature a modem, enabling you to use the internet through your TV.

Software update: Many Freeview boxes are updated by the manufacturer with new or improved features after release. These are broadcast over the air and an onscreen message is often displayed when one is available for download.

Parental lock: A four-digit PIN number can be used to control access to certain channels or the set-top box's control menus.

Widescreen support: If you have a widescreen TV this will 'stretch' a conventional 4:3 TV picture to fill the screen and display 16:9 widescreen broadcasts in full screen.

FREEVIEW ADAPTERS

Make and model	Receiver price	Analogue UHF loopthrough	Autoscan	Manual scan	Event timers	EPG	MHEG-5	Software update	Parental lock	Modem	Hard disc size	Number AV outputs	S-video outputs	Widescreen support	Letterbox mode	Stereo audio outpus	Digital audio outputs	UHF output range	Comments
Daewoo DS608P	£100	◆	◆		-	◆	◆	OTA	-	-	N/A	1	-	◆	-	-	-	21-69	Easy to use and comes with a sensitive Setpal tune,r but lacks connectivity ●●●○○
Ferguson FDT-2000	£99	◆	◆	◆	8	◆	◆	OTA	◆	-	N/A	2	-	◆	◆	◆	◆	21-69	Almost identical to Thomson DTI 1000 inside and with lots of features, but ugly and with a poor remote ●●●○○
Goodmans GBD1	£99	◆	◆	◆	5	◆	◆	OTA	◆	-	N/A	1	-	◆	◆	-	-	21-69	Functional if not the best-looking adapter on the market. There are better Goodmans adapters around ●●●○○
Goodmans GBD3	£60	◆	◆	◆	5	◆	◆	OTA	◆	-	N/A	2	-	◆	◆	◆	-	21-69	Cheap and cheerful adapter. Easy to use, but basic features ●●●○○
Grundig GDT1000/ GDT1500	£99	◆	◆	◆	8	◆	◆	OTA	◆	-	N/A	2	-	◆	◆	-	-	21-69	The 'breadbin' or the 'brick'? Neither is pretty but both are fairly versatile ●●●○○
Hauppauge DEC2000-T	£130	◆	◆	◆	-	◆	◆	OTA	-	-	N/A	2	-	◆	◆	◆	-	21-69	A Freeview adapter that can also be used to record digital TV on your PC. Good value for the money ●●●●○
Hauppauge DEC 1000-T	£99	◆	◆	◆	-	◆	◆	OTA	◆	-	N/A	1	-	◆	◆	-	-	21-69	Bedroom-friendly brother to the DEC2000-T. Good performance but connections could be better. ●●●○○
Labgear DTT100	£100	◆	◆	-	-	◆	◆	OTA	-	-	N/A	1	-	◆	-	-	-	21-69	Another adapter with a sensitive Setpal tuner. Easy to use but best suited to spare rooms ●●●○○
Nebula DigiTV	£130	◆	◆	◆	50	◆	◆	PC	◆	-	N/A	-	-	◆	-	-	-	21-69	PC TV USB box with seven-day EPG and excellent PVR features ●●●●●
Netgem i-Player	£150	◆	◆	◆	-	◆	◆	OTA	◆	56k	N/A	2	-	◆	-	◆	◆	21-69	Adapter with onboard internet access and a wealth of connections. What more could you want? ●●●●○
Nokia 221 T	£130	◆	◆	◆	8	◆	◆	OTA	◆	-	N/A	2	-	◆	-	◆	◆	21-69	Nokia's Navibar system makes this well-featured Freeview adapter a joy to use ●●●●○
Pace DT-210F	£90	◆	◆	◆	12	◆	◆	OTA	◆	-	N/A	2	-	◆	◆	◆	◆	21-69	If you can't afford a Pace Twin, this well-specced adapter will do just fine ●●●●○
Pace Twin Digital TV Recorder	£399	◆	◆	◆	UL	◆	◆	OTA	◆	-	20GB	2	-	◆	◆	-	◆	21-69	The first Freeview PVR is no disappointment. Easy to use with excellent sound and pictures ●●●●●
Panasonic TU-CT20	£99	◆	◆	◆	-	◆	◆	OTA		-	N/A	2	-	◆	◆	◆	-	21-69	Flat enough to fit under your TV and with all plenty of connections to satisfy most people ●●●●○
Philips DTR1500	£100	◆	◆	◆	10	◆	◆	OTA	◆	-	N/A	2	-	◆	-	◆	◆	21-69	Vertical-standing adapter that has much to satisfy. Not as good as the Sony adapter, though ●●●●○
Pioneer DBR-TF100GB	£100	◆	◆	◆	10	◆	◆	OTA	◆	-	N/A	2	-	◆	-	-	◆	21-69	Great performance and features on this excellent adapter ●●●●○
Samsung SIR-U200i	£99	◆	◆	-	-	◆	◆	OTA	-	-	N/A	2	-	◆	◆	-	-	21-69	Resembles a futuristic crab and isn't too shabby on the inside, either. No audio connections ●●●●○
Sony VTX-D800U	£115	◆	◆	◆	8	◆	◆	OTA	◆	-	N/A	2	-	◆	◆	◆	◆	21-69	Good performance, easy to operate and stylish to boot ●●●●○
Strong SRT-5000T	£99	◆	◆	◆	8	◆	◆	OTA	◆	-	N/A	1	-	◆	-	-	-	21-69	Simple to set up and good for the bedroom. Tuner isn't the best we've seen in weak signal areas ●●●○○
Technisat Digipal 1	£119	◆	◆	-	8	◆	◆	OTA	◆	◆	N/A	1	-	◆	-	-	-	21-69	Handy compact design and good performance, but lacking in features. Needs a price-cut ●●●○○
Thomson DTI 1000	£99	◆	◆	◆	8	◆	◆	OTA	◆	-	N/A	2	-	◆	◆	◆	-	21-69	Small and smart-looking adapter with excellent performance and connections ●●●●○
Thomson DVT1100	£199	◆	◆	◆	10	◆	◆	OTA	◆	-	N/A	2	-	◆	◆	◆	◆	21-69	Freeview/DVD combi gives you the best of both worlds in one tempting and space-saving package ●●●●○

INTEGRATED DIGITAL TELEVISIONS (IDTVs)

Panasonic TX-28DTS3 £850

At under £1,000 this 28in widescreen TV with integrated Sky Digital and Freeview should be high on any digital TV fanatics' (or newcomers for that matter) shopping list. If you're happy to have a dish installed then, even without subscribing to Sky, you're guaranteed to bag dozens of free-to-air channels from Astra 2 and Panasonic's reputation for making some of the speediest Digiboxes around ensures that performance is first rate. The DTT portion, meanwhile, contains all the features you'd expect from a Freeview adapter including an EPG and digital teletext. A superb all-rounder also available as a 32in version for around £1,200. ●●●●●

Sony KD-32DX150 £1,200

This 32in set sports a smart, angular design and lots of useful features. It's possible to record an analogue channel while a watching digital one (or vice versa) and you can schedule digital terrestrial recordings directly from the three-quarter screen EPG. Audio and visual performance is excellent while the rear sports a generous three Scarts. ●●●●○

Toshiba 28ZT29B £1,050

This superb value widescreen 28in IDTV package is also a breeze to use; both analogue and digital pictures are first-rate, thanks to the onboard picture processing. Comprehensive sound options include Dolby Pro-Logic (speakers are included) upgradeable to Dolby Digital 5.1 which, coupled three Scarts and a CI slot for future pay-TV services ensures future-proofing. ●●●●●

Philips 28DW6557 £800

The 28in 28DW6557 is a solid mid-range buy for DTT newcomers. There's a now-and-next EPG, along with parental lock and favourites list options and both picture and Nicam sound are above average. Two Scart connectors might seem stingy but at least having an onboard tuner means one less little black box to connect. ●●●●○

LG DI-28FZ11 £600

Budget IDTVs are good news for uptake of Freeview, and this is a good stab at one. There's a now-and-next EPG, MHEG-5 software for interactive services, and rear connections include three Scarts, though only one is RGB. Analogue pictures are a bit of a letdown, but pictures from the digital tuner are crisp and artefact-free. A keen budget buy. ●●●○○

IDTVs

Make and model	Size	Price	System	EPG	MHEG-5	Software update	Parental lock	Modem	CI slot	Number of AV outputs	Stereo audio outputs	Digital audio outputs	Comments	
LG D1-28F211	28in	£600	DTT	◆	◆	OTA	◆	-	2	3	◆	-	Budget-priced IDTV with plenty of features butdecidedly average picture	●●●○○
Goodmans GTW69W1DT	28in	£430	DTT	◆	◆	OTA	◆	-	2	2	◆	-	A budget set that has very good picture quality for the money, but poor sound	●●●○○
Panasonic TX-28DTS3	28in	£850	DTT Sky	◆	◆	OTA	◆	◆	1	2	◆	-	Sky Digital and Freeview in one superb digital TV all-rounder	●●●●●
Panasonic TX-32DT4	28in	£950	DTT	◆	◆	OTA	◆	-	1	2	◆	-	Very easy to use, but a little expensive for what's on offer	●●●○○
Philips 28DW6557	28in	£800	DTT	◆	◆	OTA	◆	-	1	2	◆	-	A keen price for one of the best thought out, best-performing IDTVs on the market	●●●●○
Sanyo CE28DFN2	28in	£599	DTT	◆	◆	OTA	◆	-	1	2	◆	-	Sanyo's first budget IDTV delivers mixed picture and disappointing audio results	●●●○○
Sony KD-32DX40U	32in	£1,200	DTT	◆	◆	OTA	◆	-	1	2	◆	-	Superseded by the DX150, but still a great TV in its own right	●●●●○
Sony KD-32DX150	32in	£1,050	DTT	◆	◆	OTA	◆	-	1	3	◆	-	Super-stylish IDTV boasts a superlative picture and excellent conectivity	●●●●○
Toshiba 28ZT29B	28in	£1,050	DTT	◆	◆	OTA	◆	-	1	3	◆	-	Dolby Pro-Logic sound is just one of the many excellent features of this bargain IDTV	●●●●○
Toshiba 42WT29B	42in	£2,000	DTT	◆	◆	OTA	◆	-	1	3	◆	◆	A rear projection cousin to the 28ZT29B boasts plenty of features but a disappointing tuner	●●●○○

What Camcorder

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- All the latest technology, including Sanyo's new Xacti MPEG4 cam!
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- The finest pocket portables battle it out!
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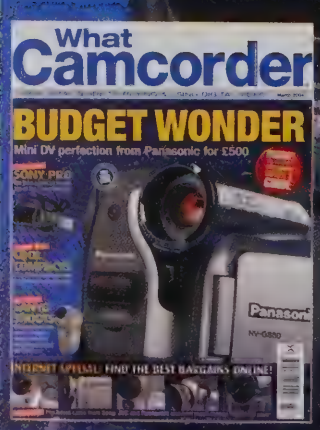

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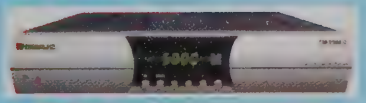

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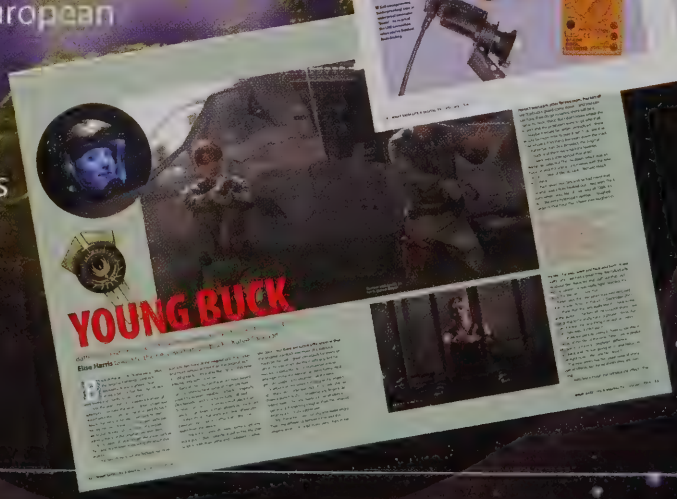

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Jargon buster

CONFUSED? SATELLITE & DIGITAL CHOICE EXPLAINS THE JARGON AND TECHNICAL BUZZWORDS

AC-3 – Flexible audio data compression format designed by Dolby Laboratories to enable transmission of high-quality multi-channel audio, such as Dolby Digital 5.1, alongside digital TV signals. A digital TV receiver with the correct hardware recognises the AC-3 signal and passes it to a digital audio output for decoding by home cinema audio equipment.

ADR (Astra Digital Radio) – A digital audio system in MPEG-1/layer 2 for transmitting digital audio signals within convenational audio subcarriers.

Actuator – The motor system that drives a motorised multi-satellite dish.

Antenna – Device which picks up and delivers satellite signals to a receiver, most commonly called a dish.

Apogee – The point in a satellite's orbit when it is at its farthest distance from the Earth.

Ariane – A non-reusable rocket system which has launched many European satellites into space.

Artefacts – blocks of colour which appear in digital TV pictures, caused by either the broadcaster using too much compression or poor components in the receiver for converting the digital signal to analogue.

Astra – The main satellites for UK and European reception. Astra 1A-1K orbit the Earth at 19.2°E, and supply hundreds of foreign digital channels. Astra 2A-2D orbit at 28.2°E and provide the Sky Digital signals.

AV (Audio-Visual) – A blanket term for audio and video. An AV system is a common description of a setup in which a TV and hi-fi are connected and working in tandem – as in a home cinema system.

Azimuth – The horizontal angle between an antenna's reception path and a compass direction. It's usually expressed as a compass bearing or degrees east or west of south.

Bandwidth – Range of frequencies occupied by a signal or allowed by receiving equipment (basically, what a receiver is capable of receiving).

Baseband – The raw satellite TV signal before it is re-modulated into a signal which is suitable for a TV.

Beam – A satellite transmission pattern. It may be wide, narrow or spot.

BER (Bit Error Rate) – The probability of errors occurring during a digital satellite transmission.

Broadband – Transmission of digital audio, video or data through a high data-rate medium such as satellite, digital cable or ADSL.

C-band – Signal frequency range (3.70-4.20GHz) used for satellite TV in America and Africa.

Chrominance – The section of a TV signal that carries the picture's colour information.

Clarke Belt – Named after the author Arthur C Clarke, the Clarke Belt is an orbit used by satellites at a height of 22,250 miles, in which satellites make an orbit in 24 hours, yet remain in a fixed position relative to the Earth's surface.

Co-ax – Name given to co-axial cable and connectors that are used for aerial and antenna cables.

Common Interface – A slot that enables a common interface module to be inserted in some digital receivers for watching pay-TV packages.

Composite Video – TV signal containing chrominance, luminance and sync information. Used in Scart connectors.

Conditional access – technology which prevents unauthorised viewing of TV or other content, usually by scrambling (encrypting) it and issuing a viewing card

DBS band – Signal frequency range (11.70-12.40GHz) intended for direct TV broadcast by satellite channels. Not all TV satellites use this band.

DVB (Digital Video Broadcast) – The European digital TV standard. Another letter is sometimes added (such as S in DVBS for satellite) to indicate the transmission method.

Decoder – Unit that is connected to a satellite receiver to unscramble a picture that has been encrypted.

De-emphasis – A filter system that is integrated into a satellite receiver to reduce background audio noise, not unlike Dolby.

Demodulator – The section of a satellite receiver that is designed to extract both the audio and video information from an incoming signal.

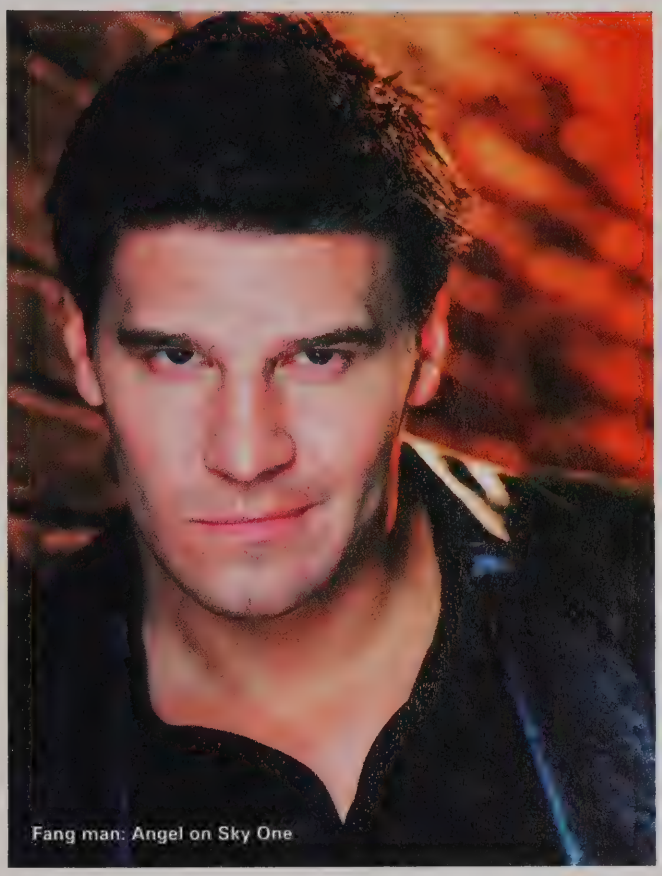
Depolariser – A device that is used to convert circular polarised signals to linear. See Polariser.

Digital terrestrial – Digital TV channels which are relayed by TV transmitters to an aerial and converted into analogue for display by a set-top box (Freeview adapter). See Freeview.

DiSEqC – Facility that lets you control several LNBs or dishes from one LNB input.

Dish – See Antenna.

Dolby Digital – A high-quality surround sound format using digital signals, with five surround channels and one bass channel.



Fang man: Angel on Sky One

Downlink – A signal's path from satellite to antenna.

ECM (Electronic Counter Measures) – Sent out 'over the air' occasionally by broadcasters to turn off pirate viewing cards.

EPG (Electronic Programme Guide) – Provides TV listings on screen.

Elevation – The vertical angle between an antenna's reception path and the horizontal.

Encryption – Technique of encoding a signal so that it is unwatchable without decoding equipment. Encrypted signals are reconstructed using a decoder and ,occasionally, a smart card. Also known as 'scrambling'.

Event timer – Programmable timer built into many satellite receivers which switches on and changes channels for unattended video recording.

FEC (Forward Error Correction) – Redundancy information signals are added to digital signals with the aim of recognising and correcting typical errors which occur during transmission.

F-Connector – A screw-on plug that is commonly used for LNB-to-satellite receiver connections.

Feedhorn – A device that collects the signals at the focus of the satellite dish and channels them to the LNB.

Fixed-dish system – Satellite system in which the dish is targeted at one particular satellite, almost always Astra.

Footprint – An area of the Earth that is able to receive a particular satellite's signals.

Freeview – A package of around 40 TV and radio channels organised by the BBC, Sky, and Crown Castle. Freely available to anyone with a TV aerial and Freeview adapter.

FSS (Fixed Satellite Services) band – Portion of the Ku-band (10.95-11.70GHz) which is the main satellite TV band.

Geostationary orbit – See Clarke Belt.

Horizon-to-horizon – A compact polar mount that allows a wide range of movement and accurate tracking of satellites.

IRD (Integrated receiver/decoder) – A satellite receiver with a built-in decoder for unscrambling

subscription channels such as Sky Movies.

Ku-band – Signal frequency range (10.70-18.00GHz) used for most European TV satellites.

Loopthrough – Connections on a receiver which allow for external equipment, such as decoders, to be inserted into a TV's signal path.

LNB (Low Noise Block down-converter) – Amplifies received signals and converts them from microwaves to lower frequency signals which are then sent along a cable to the satellite receiver.

Luminance – A section of a TV signal that carries the picture's brightness information.

Magnetic polariser – Polariser controlled by an electrical current from a satellite receiver.

Marconi-type LNB – A combined LNB/polariser commonly used on Astra systems with polarity selected by changing the voltage supplied by the satellite receiver to the LNB.

Mechanical polariser – A polariser that is controlled by electrical pulses from the receiver.

MHEG-5 – Software required for viewing red button interactive services, including digital teletext. Pre-loaded in most set-top boxes.

Microwave signals – Electronic radio frequency signals that are above one gigahertz.

Motorised system – See Multi-satellite system.

MPEG – A standard of digital video compression developed by the Motion Picture Experts Group. MPEG2 is used for DVDs and most digital TV, and MPEG4 is used for streaming video using internet or IP protocols.

Multicast – digital video, audio, or data transmissions broadcast over a wide area, but only available to a select group of users who can unscramble the signal.

Multiplex – A single data stream used to transmit several Freeview channels at once. Most use the 16QAM (Quadrature Amplitude Modulation) transmission standard to increase chances of reception. However, a few (such as those containing the ITV channels) still use 64QAM, which is more prone to interference.

Beach babe: Mile High on Sky One

Sailor suits: Navy NCI on FX

Multi-satellite system – System in which a specialised receiver, in conjunction with a motorised dish, receives signals from the series of satellites in the Clarke Belt.

Noise figure – A measure of the performance (noise contribution) of an LNB in decibels. The lower the said figure, the better.

NVOD (Near Video On Demand) – Staggered broadcasting of the same TV programme or movie on several channels.

NTSC (National Television Standards Committee) – TV transmission standard used in America and parts of Asia.

Orbit – The path a satellite takes around the Earth.

PAL (Phase Alternate Line) – Television system used by British terrestrial and satellite broadcasters.

Parental lock – A lock found on most receivers which prevents access to certain channels. Usually operated by punching in a series of numbers.

Phono – Sound sockets that are commonly found on the back panel of satellite receivers.

Polariser – Device on a dish that separates one polarity signal from another.

Polarity – The ability of satellite signals to differentiate between signals of similar frequencies, thus allowing more channels in the available broadcasting space.

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ALBA:
Harvard House, 14-16 Thames Road, Barking, Essex.
Tel: 020 8594 5533

AMSTRAD:
Brentwood House, 169 Kings Rd, Brentwood, Essex.
Tel: 01277 228888

ASTRA UK:
7th Floor Wellington House, 125 Strand, London WC2R 0AP
Tel: 020 7420 3600

BBC WORLD/PRIME:
Woodlands, 80 Wood Lane, London W12 0TT.
Tel: 020 8576 2308

BRAVO:
See Flextech TV

BRITISH TELECOM:
West Side, London Rd, Hemel Hempstead, Herts HP3 9YF.
Tel: 150

BUSH:
5 Old Parkbury Lane, Colney Street, St Albans, Hertfordshire AL2 2DY.
Tel: 01923 859777

CAMBRIDGE INDUSTRIES:
Cambridge House, S Commerce Park, Brunnel Rd, Teale, Berkshire RG7 4AB.
Tel: 01189 306699

CANAL PLUS NETHERLANDS:
Tolaan 63, 1932 Sint-Stevens-Woluive, Belgium.
Tel: 0031 2356 81500

CARTOON NETWORK/TMC:
See Turner Broadcasting

CHALLENGE TV
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CHANNEL MASTER:
Glenfield Park, Northrop Ave, Blackburn, Lancashire BB1 5QF.
Tel: 01254 680444

CHRISTIAN CHANNEL EUROPE:
3rd Floor, Crown House, Borough Road, Sunderland SR1 1HW.
Tel: 0191 4952244

CNBC:
10 Fleet Place, London EC4M 7QS.
Tel: 020 7653 9300

CNN INTERNATIONAL:
Turner House, 16 Great Marlborough Street, London W1V 1AF

CONFEDERATION OF AERIAL INDUSTRIES:
Fulton House Business Centre, Fulton Rd, Wembley Park, Middlesex HA9 0TF.
Tel: 020 8902 8998

CURRYS/DIXONS:
Currys/Dixons Store Group, Dixons House, 200 The Campus, Maylands Av., Hemel Hempstead, Hertfordshire HP2 7TG.

DEPARTMENT OF THE ENVIRONMENT, TRANSPORT AND REGIONS:
Whitehall, London SW1.
Tel: 020 7276 3000

DISCOVERY CHANNEL:
160 Great Portland Street, London W1N 57B.
Tel: 020 7462 3600

DISNEY CHANNEL:
Disney Channel, Chiswick Park, Building 12, 566 Chiswick High Road, London W4 5AN.
Tel: 020 88636 2000

DON'T PANIC TV:
See Ultra Blue

ECHOSTAR INTERNATIONAL CORPORATION:
Avda. de los Pirineos 23 28700 San Sebastian de los Reyes – Madrid – Spain.
Tel: 0031 546 815122
www.echostar-int.com

EUROSAT:
5 Oxgate Centre, Oxgate Lane, London NW2 7JA.
Tel: 0208 452 6699

EUROSPORT:
84 Theobalds Road, London WC1X 8RX.
Tel: 020 7468 7777

EUTELSAT:
70 rue Balard, 75502 Paris Cedex 15, France.
Helpdesk, Tel: 00 33 1 4065 0300

FORCE:
TPS, 180-182 Stamford Street, Ashton-under-Lyme, Lancashire OL6 7LR.
Tel: 0161 344 0123
www.tps.uk.com

FLEXTECH TV:
160 Great Portland Street, London W1N 5TB.
Tel: 020 7299 5000

GLOBAL COMMUNICATIONS:
Winterdale Manor, Althorne, Essex.
Tel: 01621 744322

GOODMANS:
Units 2 & 3, Mitchell Way, Portsmouth, Hants PO3 5PR.
Tel: 01705 673763

GRANADA SKY BROADCASTING:
16 Hatfields, London SE1 8DJ.
Tel: 020 7578 4040

Hitachi:
Hitachi Sales (UK), Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire SL8 5XF.
Tel: 01628 643000

Horizon Global Electronics:
27 Pennant Terrace, Walthamstow, London E17 5BD.
Tel: 0208 281 3777
www.horizonhge.com

HUMAX:
See Turbosat

INDEPENDENT TELEVISION COMMISSION:
33 Foley Street, London W1P 7LB.
Tel: 020 7255 3000

IRTE:
Fielding Road, Cheshunt, Herts EN8 9TL.
Tel: 01992 624777

JAPAN SATELLITE TV EUROPE:
Unit 17, Kings Exchange, Tileyard Road, London N7 9AH.
Tel: 020 7607 7677

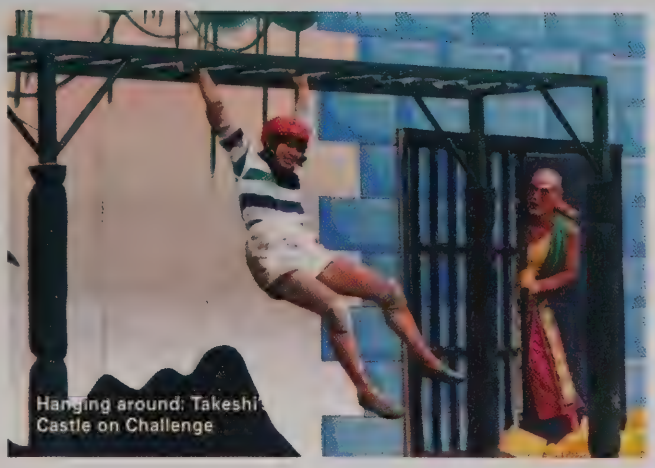
LACUNA SYSTEMS:
Unit 1-2 Bernard Way, Riverway Industrial Estate, Newport, Isle of Wight PO30 5YL.
Tel: 01983 822702
www.lacunasystems.com

LIVING:
See UK Gold.
Tel: 020 7299 5000

MANHATTAN:
See Eurosat

MBC:

Signals are either linearly polarised (horizontal or vertical) or circularly polarised (left- and right-handed).
Polar mount – Multi-satellite dish mount which enables a satellite dish to track the whole of the Clarke Belt.
Positioner – Unit which either accompanies a multi-satellite receiver or is built in and controls the movement of motorised dishes.
Pro-Logic – A surround sound system that was developed by Dolby for home cinema use.
Receiver – Unit which takes signals from a satellite dish and converts them so that they can appear on TV.
Scart – European 21-pin plug and socket standard to link audio-visual equipment.
SCPC (Single Channel Per Carrier) – Some digital channels have their own carrier frequency and thus are independent from all other signals.
Secam – French broadcasting system. On British PAL televisions, pictures appear in black and white.
SES (Société Européenne des Satellites) – The organisation that operates the Astra group of satellites.
Skew – Fine-tuning of the polarity which accounts for the different angles of signals from various satellites.
Smart card – A card used to descramble encrypted broadcasts when placed in a decoder or receiver with a built-in decoder. See Common Interface.


Hanging around: Takeshi's Castle on Challenge

SMATV (Satellite Master Antenna Television) – Satellite TV distribution system for blocks of flats with single antenna.
Subcarrier – A secondary satellite signal used for an audio soundtrack. Some channels have different language commentary on three or four subcarriers, others are occupied by radio stations.
Telecom band – A section of the Ku-band (12.40-12.80GHz) that is used by French broadcasters.
Terrestrial broadcasters – Broadcasters which transmit through the airwaves from one earthbound aerial to another, e.g. BBC and ITV.
Threshold – The measure of a satellite receiver's sensitivity, measured in decibels (dB).
Transcoder – Device that translates signals from one broadcasting standard to another, e.g. PAL to Secam.
Transponder – Components in a satellite that receive, process and re-transmit a signal from, and back to, Earth. On Astra satellites most stations are allocated one transponder, though a small number of stations share a transponder.
UHF (Ultra High Frequency) – Signal that is fed into a TV's terrestrial socket.
Uplink – A signal's path from the Earth to a satellite.
VBR (Variable Bit Rate) – The bit rate changes depending on information content and allows for a consistent picture quality.
Videocrypt – Encryption system which requires a decoder and smart card to be descrambled. Used by Sky and several other UK channels.
Voltage-switched LNB – Combined LNB/polariser commonly found on Astra systems with polarity selected by changing the voltage supplied to the LNB.
Widescreen – A TV or TV signal with a wider aspect ratio than the traditional TV standard. Widescreen TVs are 16:9 units across as opposed to the conventional 4:3 units across. ■

Trash talking: ...sh to Cash on FX

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10 Heathman's Rd. London SW6 4TJ.
Tel: 020 7501 1111

MTV and VH-1:
Hawley Crescent, London NW1 8TT.
Tel: 020 7284 7777

NATIONAL GEOGRAPHIC CHANNEL:
See Sky

NATIONAL TV LICENCE RECORDS OFFICE (NTVLRO):
Barton House, Bond Street, Bristol BS98 1TL.
Tel: 01272 230130

NEWS DATACOM (NDS):
1 Heathrow Boulevard, 286 Bath Road, West Drayton, Middlesex UB7 0DQ.
Tel: 020 8476 8000

NICKELODEON UK:
15/18 Rathbone Place, London W1P 1DF.
Tel: 020 7462 1000

NOKIA:
Bridgemead Close, Westmead, Swindon, Wiltshire SN5 7TS.
Tel: 01793 556000

ONE FOR ALL:
Universal Electronics b.v.
P.O. Box 3332, 7500 DH Enschede, The Netherlands.
Tel: 0031 53 488 8000

PACE:
Victoria Road, Saltaire, Shipley BD18 3LF.
Tel: 01274 532000

PANASONIC:
Panasonic House, Willoughby Road, Bracknell, Berkshire RG12 4FP.
Tel: 01344 862444

PARAMOUNT COMEDY CHANNEL:
15-18 Rathbone Place, London W1P 1DF.
Tel: 020 7462 1000

PHILIPS:
City House, 420-430 London Road, Croydon CR9 3QR. Tel: 020 8689 4444

PHOENIX CNE:
Marvic House, Bishops Rd, London SW6 7AD. Tel: 020 7610 3880

PLAYBOY TV:
See The Adult Channel

SAMSUNG:
3 Riverbank Way, Great West Rd, Brentford, Middx TW8 9RE.
Tel: 020 8862 9311

SOLUTIONS GROUP (UK):
Unit 2, Redbourne Park, Liliput Road, Brackmills Industrial Estate, Northampton NN4 7DT. Tel: 08456 444 000

SCI-FI:
5-7 Mandeville Place, London W1U 3AR.
Tel: 020 7535 3500

SEX VIEW:
See Ultra Blue

SHARP:
Sharp House, Thorp Road, Newton Heath, Manchester M10 9BE. Tel: 0161 205 2333

SKY SUBSCRIBER SERVICES:
1 Macintosh Road, Kirkton Campus, Livingston, Scotland EH54 7BW.
Tel: 0990 102030

SKY:
6 Centaurs Business Park, Grant Way, Isleworth TW7 5QD.
Tel: 020 7705 3000

SOCIETE EUROPEENNE DES SATELLITES:
Château de Betzdorf, L-6815 Betzdorf, Luxembourg.
Tel: 00 352 7107251

SONY (UK) LTD:
The Heights, Brooklands, Weybridge, Surrey KT13 0XW.
Tel: 020 8784 1144

STRONG NEDERLAND BV:
Parkerbaan 18, 3439 MC Nieuwegein, The Netherlands.
Tel: 0031 30 630 03 11

TVBS SATELLITE CHANNEL:
30-31 Newman Street, London W1P 3PE.
Tel: 020 7636 6818

TATUNG:
Stafford Park 10, Telford, Shropshire TF3 3AB.
Tel: 01952 290111

TELEVISION-X:
PO Box 381, 4 Selsdon Way, London E14 9GL.
Tel: 020 7308 5095

THE ADULT CHANNEL/PLAYBOY TV:
(Sky Digital customers)
Tel: 08705 123321
Websites: www.theadultchannel.co.uk
www.playboytv.co.uk

TECHNISAT:
Sat Europa, Commodore Park, 15 Cador Drive, Portchester P016 9EP.
Tel: 01329 516 750
www.sateuropa.co.uk

TECHNOMATE:
328 Hoe Street, London E17 9PX.
Tel: 0208 509 2440
www.technomate.com

TELEVÉS (UK):
11 Hill Street Industrial Estate, Cwmbran, Gwent NP44 7PG. Tel: 01633 875821
www.televes.com

THOMSON CONSUMER ELECTRONICS:
9 Place des Vosges, La Défense 5, Courberroie 92050, France.
Tel: 00 331 4904 9500

TOSHIBA:
Frimley Road, Frimley, Camberley, Surrey.
Tel: 01276 62222

TRAVEL:
Landmark Travel Channel, 66 Newman Street, London W1P 3LA.
Tel: 020 7636 5401

TURBOSAT LTD:
Turbo House, 609-613 Holloway Road, London N19 4DJ. Tel: 020 7281 9258

TURNER BROADCASTING:
See CNN International

UK GOLD:
See Flextech
Tel: 020 7299 5000

ULTRA BLUE:
Mediasat, Rival House, Staplehurst Road, Sittingbourne, Kent. Tel: 07077 868686
P.O. Box 3332, 7500 DH Enschede, The Netherlands

VH-1:
See MTV

ZEE TV:
Unit 7, Belvue Business Centre, Belvue Road, Northolt UB5 5QQ. Tel: 020 8841 5112

Sky Guide

SATELLITE & DIGITAL CHOICE PRESENTS THE DEFINITIVE GUIDE TO SUBSCRIBING TO SKY DIGITAL

When most people in the UK think of getting satellite TV they think of Sky Digital.

Indeed, owning a basic Sky system comprising a Digibox and mini-dish will get you dozens of free-to-air channels from Astra satellites and potentially dozens more if you choose to subscribe.

The cheapest and easiest way to get a Sky system is to take advantage of Sky's free equipment offer by calling Sky's In-Home Service (01732 529 920). Although the mini-dish and Digibox are free you're still required to subscribe to Sky for at least a year and to pay for installation (£60 for viewers taking the top tier Sky package and £70 for any other package).

You then book an installation date and, while you're waiting, the contracts come in the post and you can choose which package you want to start on.

You sign them and your viewing card should arrive soon afterwards. When the installer arrives he puts up the mini-dish, routes it through to the living room and connects it to the nearest phone socket.

He turns the box on and downloads the latest software, then you insert the viewing card and either you or the installer calls Sky to validate the card and you have access to the channels.

If you're buying through a High Street retailer, the process is the same except that you get a choice of Digibox (they're all the same inside).

The contract which subsidises the Digibox requires you to keep the box 'fully and effectively connected to a mini-dish' and to a fixed and operational telephone line in the Territory (the UK) which is capable of making outgoing calls.

You must also keep your viewing card in the box constantly, inform Sky in writing if you move house and agree to have the system installed by a Sky-authorised installer.

If you don't want to subscribe you can get the box and dish free from Sky In-Home services, plus a £120 charge for installation, or buy a Digibox (around £299 with a mini-dish) from an independent satellite and electronics dealer without installation.

If you want Sky Plus (a combined Digibox and hard disc recorder) slightly different rules apply. Sky Plus costs £199 plus a £10 monthly fee on top of your Sky subscription (waived if you subscribe to more than one of Sky's premium channels) and £50 for installation. It requires a dish fitted with a quad LNB which can be used to feed two more Digiboxes to it if you wish.

Bear in mind that if your subscription lapses you will no longer be able to view recordings stored on the hard disc. See page 74 for more on Sky Plus.

HOW CAN I WATCH SKY IN MORE THAN ONE ROOM?

If you want to watch two channels in two different rooms, you can buy a second Digibox from Sky for £99 adding a £50 charge for the necessary installation of a quad LNB on your dish. A subsidised second subscription viewing card will cost you £15 a month.

If you're happy to watch the same channel somewhere else, you can connect a second TV to one of the Digibox's UHF outputs and use a remote link to change the channel in another room.

Alternatively, you could use a wireless videosender to transmit the picture and sound and also relay remote control commands from your Digibox to another room. If you have Sky Plus, although it has two tuners receiving two different channels, these cannot be outputted separately to two TVs.

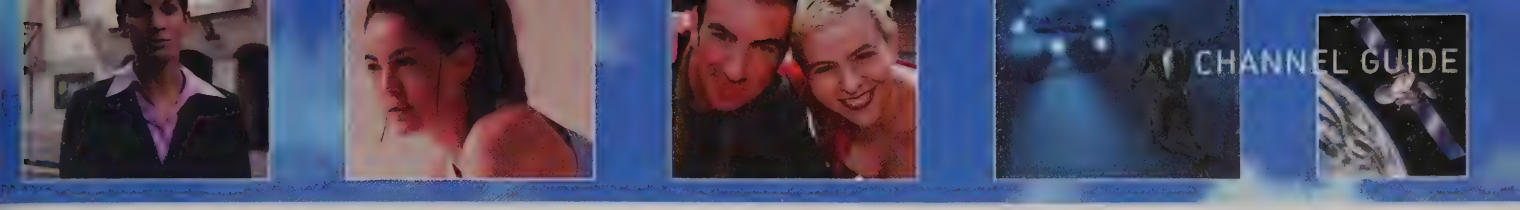
WHAT IF I JUST WANT THE FIVE MAIN CHANNELS?

All of the BBC's digital channels (including regional variations) can now be picked up free-to-air from Astra 2D by anyone with a free-to-air digital receiver, including a Digibox. Digibox owners can find all the regional variations in the upper 900s of their Sky EPG.

ITV and Channel 4 remain 'soft encrypted' and are currently only receivable by Sky subscribers or those in possession of a free-for-view card purchased before December 31, 2003. These cost £23.50, last for two years, and can be obtained by calling 0870 054 1800. ITV2 is only available to Sky subscribers.

Subscribers wishing to receive regional variations for ITV can do so. Just select Add Channels in the System menu and enter the following information.

For Carlton, London Weekend, HTV Wales, and HTV West: 10.832HGHz/H,



symbol rate 22000, FEC 5/6. For Anglia, Border England, Border Scotland, Granada, Meridien, Tyne Tees, Yorkshire: 10.891GHz/H, symbol rate 22000, FEC 5/6. For Grampian, Scottish TV, Ulster TV and Channel TV: 10.906GHz/V, symbol rate 22000, FEC 5/6.

WHAT EXTRA CHANNELS CAN I GET?

The standard Digibox and 45cm mini-dish provided by Sky is only really suitable for picking up channels from Astra 2 at 28.2°E and Eurobird at 28.5°E.

You cannot use the Digibox to receive encrypted channels other than those on Sky Digital.

"A 60 cm dish will be able to pick up around 60 channels from Astra, while a 70cm dish could give you close to a hundred from Hot Bird"

This is because it contains no form of de-encryption other than Videoguard, which is exclusive to Sky. Neither can you add your own de-encrypting CAMs for this purpose as there is no common interface slot in the Digibox specification.

If you are looking to use your Digibox for free-to-air channels you'll be better served pairing it with a larger dish.

A 60cm dish will be able to pick up around 60 channels from Astra, while a 70cm dish could give you close to a hundred from Hot Bird.

Although France's TV5 is available to subscribers, there are no other mainland European channels receivable using the basic Sky system and locating channels is further hampered by the limited symbol rate range of the Digibox (22000 or 27500).

SKY DIGITAL SUBSCRIPTION CHARGES

	Family	Popular Mix	Knowledge	Kids & Music	Lifestyle	Value
SKY WORLD Sky Sports 1, Sky Sports 2, Sky Movies 1-9	£40	£39	£39	£39	£39	£38
SKY MOVIE WORLD Sky Movies 1-9	£34	£33	£33	£33	£33	£32
SKY SPORTS WORLD Sky Sports 1, 2, 3 and Extra	£33	£32	£32	£32	£32	£31
Sky Sports 1, Sky Sports 2, Sky Movies 1, 3, 7, 9	£38.50	£37.50	£37.50	£37.50	£37.50	£36.50
Sky Sports 1, Sky Movies Sky Movies 1-9	£36	£35	£35	£35	£35	£34
Sky Sports 2, Sky Movies 1-9	£36	£35	£35	£35	£35	£34
Sky Sports 1, 2 Sky Movies 2, 4, 6 8	£33	£32	£32	£32	£32	£31
Sky Sports 1, Sky Movies 1, 3, 5, 7, 9	£33	£32	£32	£32	£32	£31
Sky Sports 2, Sky Movies 1, 3, 5, 7, 9	£29	£28	£28	£28	£28	£27
Sky Sports 1, Sky Movies 2, 4, 6, 8	£29	£28	£28	£28	£28	£27
Sky Sports 2, Sky Movies 2, 4, 6, 8	£29	£28	£28	£28	£28	£27
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Sky Entertainment Packages	£19.50	£16.50	£16.50	£16.50	£16.50	£13.50

CONTACT: SKY 08702 404040

To subscribe to Sky Digital, pick one of the six entertainment packages below then add your Premium Channels here. Certain channels have time-delayed '+1' variations which are not shown for reasons of space.

SKY FAMILY PACK

Sky One, Sky One Mix, UK Gold, UKG2, Living TV, Granada Plus, Challenge?, Bravo, Paramount, Sci-Fi, Discovery Home & Leisure, Men & Motors, Sky Travel, Sky Travel Extra, UK Style, UK Food, UK Drama, Hallmark, Discovery Health, E4, ITV2, E!, UK Bright Ideas, Ftn, QVC, Sky Travel Shop, Sky News, Bloomberg, CNBC, Fox News, Discovery Channel, Discovery Travel & Adventure, Discovery Civilisation, Discovery Sci-Trek, Discovery Wings, National Geographic, Adventure One, The History Channel, Biography, UK Horizons, Discovery Animal Planet, UK History, Sky Sports News, British Eurosport, Eurosportnews 24hr, Attheraces, The Amp, Scuzz, Flaunt, MTV, MTV Hits, VH1, VH1 Classic, MTV 2, MTV Base, MTV Dance, TMF, The Box, KISS, Smash Hits, Magic, Q, Kerrang!, The Hits, Music Choice, TalkSport (radio), Big Blue (radio), Cartoon Network, Toonami, Boomerang, Nickelodeon, Nick Replay, Nick Toons TV, Trouble, Fox Kids, Discovery Kids, Nick Jr

POPULAR MIX PACK

Sky One, UK Gold, Living TV, Paramount, Discovery Home & Leisure, QVC, Sky News, Bloomberg, Discovery Channel, National Geographic, Music Choice, Cartoon Network, Nickelodeon, Nick Replay, Fox Kids

KNOWLEDGE PACK

Sky One, Discovery Home & Leisure, QVC, Sky News, Bloomberg, CNBC, Discovery Channel, National Geographic, The History Channel, Biography, UK Horizons, Music Choice

KIDS AND MUSIC PACK

Sky One, Discovery Home & Leisure, QVC, Sky News, Bloomberg, MTV, VH-1, MTV2, The Box, Music Choice, Cartoon Network, Nickelodeon, Nick Replay, Trouble, Fox Kids

LIFESTYLE PACK

Sky One, Plus, Challenge?, Bravo, Sci-Fi, Discovery Home & Leisure, Men & Motors, UK Style, UK Drama, QVC, Sky News, Bloomberg, Music Choice, Trouble

VALUE PACK

Sky One, Discovery Home & Leisure, QVC, Sky News, Bloomberg, Music Choice

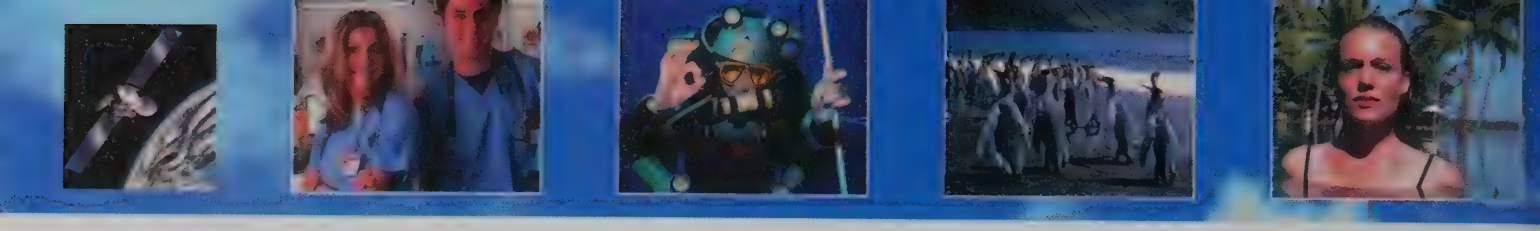
FREE RADIO

BBC: Radio One, Radio Two, Radio Three, Radio Four LW & FM, Radio Five Live, Radio Five Live Sports Extra, Radio Scotland, Radio Cymru, Radio Nan Gaidheal, Radio Wales, Radio Ulster, World Service Europe, Asian Network, 1 Xtra, 6Music, Radio 7

Commercial: 2FM, Amrit Bani, Akash Radio, Calvary, Capital FM, Capital Gold 458, Century Digital, Classic FM UK. Classic Gold Digital 828, Club Asia, Core, Costcutter Digital Radio, Cross Rhythms Radio, EWTN Radio Europe, Galaxy105, Gaydar Radio, Heart 106.2 FM, Jazz FM 102.2, LBC 97.3, Lyric FM, Mean Country1035AM, Oneword, Panjab Radio, Planet Rock, Premier Christian Radio, Primetime Radio, Radio Caroline, Real Radio, SBN, Solar Radio, Sukh Sagar Radio, Sunrise Radio 1458, Talk Gospel, Teds FM, The Dream, The Mix, The Storm, Topps FM, Total Rock, TWR, UCB Bible, UCB Europe, UCB Inspirational, UCB Talk, Virgin Radio, WRN English Europe, XFM 104.9

A LA CARTE PREMIUM CHANNELS

Sky subscribers can also add the following premium channels to their package: Star, MUTV, Film Four, Music Choice Extra, Disney Channel, Chelsea TV, Artsworld



Across the channels

THERE ARE NOW DOZENS OF FREE AND PAY-TV DIGITAL CHANNELS AVAILABLE ON SATELLITE TV. SATELLITE & DIGITAL CHOICE HAS COMPILED A NO-NONSENSE GUIDE TO CHANNELS ON OFFER AT ONE OF THE MOST POPULAR LOCATIONS, ASTRA 2A, B AND D AT 28.2°E. CHANNELS MARKED WITH AN Ⓕ ARE ALSO AVAILABLE ON FREEVIEW

FREE-TO-AIR CHANNELS

There are a growing number of channels at 28.2°E which can be received unencrypted with any digital satellite receiver. For copyright reasons, some British terrestrial channels (ITV, Five, Channel 4) can only be picked up through a Sky Digibox with a Sky viewing card.

ACTV Documentaries and entertainment-based fare with an Afro-Caribbean flavour **EPG:** 271

AVAGO Bingo-related live interactive gaming all day. Press the red button to get your cards. **EPG:** 235

BBC ONE General entertainment mix of comedy, docs, drama, news and sport from the public service broadcaster. **EPG:** 101 Ⓕ

BBC TWO Broadcasting of a highbrow nature: docs, comedy, drama and news analysis. **EPG:** 102, regional variations on 964-966 Ⓕ

BBC THREE Successor to BBC Choice has first-run shows, general entertainment and learning for 20s-30s. **EPG:** 115 Ⓕ

BBC FOUR Arts and culture content with an international flavour including nightly news from around the world. **EPG:** 116 Ⓕ

BBC NEWS 24 The latest news from around the world 24 hours a day as it breaks. **EPG number:** 507 Ⓕ

BBC PARLIAMENT Coverage of our nation's leaders in the Commons, Lords and select committees. **EPG:** 508

B4U MUSIC The latest hits, golden oldies, charts and gossip from the people who brought you B4U Movies. **EPG:** 801

BEN The Big Entertainment Network offers general entertainment with religious programming from the US. **EPG:** 238

CBBC BBC children's programmes aimed at secondary schoolers and above, with some education amid the fun. **EPG:** 621 Ⓕ

CBEEBIES Tweenies, Teletubbies, Bob the Builder, plus interactive content for pre- and primary school children. **EPG:** 622 Ⓕ

CCTV-9 English language news and entertainment from the Republic of China. **EPG:** 534

CHANNEL U Interactive music video channel playing dance, pop and rock music chosen by mobile-hugging teens. **EPG:** 467

CHART SHOW TV Round the clock chart hits from channel that used to be a TV programme. **EPG:** 455

CHAT BOX Text-message based interactive shenanigans for the permanently 'mobile'. **EPG:** 690

CHRISTIAN TV Broadcasting religious sermons and other related programmes from around the world. **EPG:** 675

CLASSIC FM TV Round-the-clock music videos from classical works to the latest orchestral film scores. **EPG:** 464

CLASSICS TV Classic movies of yesteryear, plus bios of the Hollywood legends who appeared in them. **EPG:** 247

CNN Non-stop current affairs from the people who invented the rolling news channel. **EPG:** 513

EURONEWS Pan-European news channel providing a European perspective on world events. **EPG:** 528

EXTREME SPORTS Mainstream sports getting you down? Extreme has every kind of reckless pursuit. **EPG:** 422

FASHION TV The latest fashions from around the world, featuring famous designers and glamorous models. **EPG:** 220

FRIENDLY TV Phone-ins, text-ins games and more on this interactive TV-friendly channel. **EPG:** 268

NATION 277 Music chat show and game shows in a similar manner to Friendly TV. **EPG:** 277

GAME NETWORK News, previews, reviews and features on what's going on in the computer games business. **EPG:** 223

GAYDATE Spin-off from the Dating Channel aimed at gays and lesbians. **EPG:** 688

THE GOD CHANNEL Religious ministry for families. It reflects a Christian perspective and lifestyle. **EPG:** 671

GOING PLACES TV Armchair tourism & booking info for that get-away, bypassing high street travel agents. **EPG:** 669

ITV NEWS 24-hour rolling news from the studios of ITN. **EPG:** 525 Ⓕ

JOBS TV Round-the-clock careers advice including tips on how to create the best CV. **EPG:** 683

LIVE TV The channel that gave you News Bunny returns with more off-beat 'specialist treats'. **EPG:** 274

MOTORS TV Top gear TV from France with tests, docs, magazine programmes, and motoring events. **EPG:** 429

MTA-MUSLIM TV News and documentary style-programming covering events in Muslim nations. **EPG:** 807

OBE Original Black Entertainment with music and drama programmes showing 24 hours a day. **EPG:** 280

OPEN ACCESS As the name suggests, an alternative platform for little-seen and experimental programming. **EPG:** 687

PCNE China's official news and entertainment channel for the West. **EPG number:** 673

PERFORMANCE CHANNEL The pick of global arts, with live shows and star bios. **EPG number:** 259

POP Children's programmes for little'uns and their parents who never quite grew up. **EPG:** 619

RADIO CHANNELS More than 30 radio stations in CD-quality digital audio. **EPG:** 851-896

RAPTURE Teen-centred mix of comedy, reality shows and other hip entertainment, plus text-messaging interludes. **EPG:** 265

REALITY TV When TV channels attack! Cop chases, rescues, and other real-life dramas straight from the US. **EPG:** 241

REVELATION Religious programming from around the world for Christians of all ages. **EPG:** 676

S4C News and entertainment from the land of mountains and sheep, with a good sprinkling of Welsh humour. **EPG:** 184 Ⓕ

S4C2 Welsh Parliament channel, with news of what is going on in the Assembly that rules the Principality. **EPG:** 519 Ⓕ

SHOPPING CHANNELS Dozens of shopping channels are available on Astra 2A. Most can be found on the Sky EPG between channel numbers 630-700.

SHOWCASE TV Devoted to magazines and their publishers; UK's first general entertainment masthead channel. **EPG:** 208

SKY NEWS The Sky network's free, all-day news service. Hourly bulletins on breaking stories worldwide. **EPG:** 501 Ⓕ

TBN EUROPE Positive Christian programming, giving 'encouragement to live a joy-filled Christian life'. **EPG:** 674

TEXT ME TV Text chat via your mobile with other viewers and (if it's clean) see your message appear on screen. **EPG:** 686

TX1 Mobiles at the ready for this text-messaging channel. **EPG:** 689

THE COMMUNITY CHANNEL Programming to inspire people to get involved in their communities. **EPG:** 464 Ⓕ

THE DATING CHANNEL What other TV network offers the opportunity to find your soulmate? Find a friend. **EPG:** 656

THE VAULT Classic music videos for nostalgia freaks who remember the early days of videos on MTV et al. **EPG:** 456

THOMAS COOK TV The holidays chain has its own 24 hour TV channel with thousand of hols for sale. **EPG:** 648

TRAVEL CHANNEL Globetrotting travelogues galore guaranteed to make us all wish we were there. **EPG** 181

TRAVEL DEALS DIRECT Holiday specials from the big tour companies and airlines, courtesy of the Travel Channel. **EPG:** 638

TV TRAVEL SHOP Stay in your armchair to book your holidays with this QVC-type channel. **EPG:** 631-632

VISION CHANNEL Sharing airspace with Life TV, the Vision Channel features sermons and songs of worship for Christian viewers. **EPG:** 202

YOU TV Maintain the body beautiful with a host of shows offering tips on health treatments and cosmetics. **EPG:** 229

BASIC LINE-UP CHANNELS

The various basic subscription packages for Sky Digital now feature a huge number of channels. All the channels listed here are available in the family package, but you'll need to use our subscriptions guide in the previous two pages to discover exactly which channels are available in your package.

ADVENTURE ONE Thrills & spills from round the world as National Geographic documents those who dare. **EPG:** 560

ATTHERACES An interactive horse-racing channel covering race meetings across the UK. Have a flutter. **EPG:** 418

BIOGRAPHY Biographies of the rich & famous from contemporary icons to legends of the past. **EPG:** 563

BLOOMBERG 24-hour news service offering rolling updated news, sport, weather, business on a schedule. **EPG:** 504

BOOMERANG Animation from Cartoon Network's library of Hanna-Barbera shows and others. **EPG:** 603

BRAVO The channel for fascinating new shows and classic nostalgia for straightforward men. **EPG:** 124

BRAVO +1 The channel for fascinating new shows and classic nostalgia for straightforward men. **EPG:** 124

BRITISH EUROSPORT English language version of the popular channel that highlights events from across the Continent. **EPG:** 412

CARTOON NETWORK Cartoons taken from libraries of classics, and archives of all main cartoon studios. **EPG:** 601/602

CARTOON NETWORK +1 Cartoons taken from libraries of classics, and archives of all main cartoon studios. **EPG:** 601/602

CHALLENGE? Non-stop game show channel! Regular inserts give viewers the chance to win prizes too. **EPG:** 121

CHANNEL 4 General entertainment with a brain from the channel that revolutionised terrestrial TV. **EPG:** 104 Ⓕ

ANIMAL PLANET Docs to tell you everything you ever wanted to know about all living creatures. **EPG:** 570 & 571

ANIMAL PLANET +1 Docs to tell you everything you ever wanted to know about all living creatures. **EPG:** 570 & 571

DEUTSCHE WELLE Germany's long established news and entertainment channel is now on Sky. **EPG:** 834

DISCOVERY CHANNEL High-quality, informative, educational and entertaining programmes. **EPG:** 551-552

DISCOVERY CHANNEL +1 High-quality, informative, educational and entertaining programmes. **EPG:** 551-552

DISCOVERY CIVILISATIONS Delves into the events that have forged the destiny of nations. **EPG:** 133 & 134

DISCOVERY HEALTH Medical docs and advice for better living from satellite's top documentaries stable. **EPG:** 196

DISCOVERY HOME & LEISURE Crafts, art or gardening, channel from the Discovery stable. **EPG:** 133

DISCOVERY HOME & LEISURE +1 Crafts, art or gardening, channel from the Discovery stable. **EPG:** 133

DISCOVERY KIDS Formerly only available on ONdigital, Discovery's daytime of facts for kids is on satellite. **EPG:** 618

DISCOVERY SCIENCE & ADVENTURE Documentaries on all manner of scientific topics. **EPG:** 235

DISCOVERY TRAVEL & ADVENTURE Documentaries on far-flung corners of the Earth. **EPG:** 553

DISCOVERY WINGS Planes, planes and more planes, for those with their head in the clouds. **EPG:** 556

E! ENTERTAINMENT TV Celebrity heat as the 24-hour US channel tells who's doing what, and with whom. **EPG:** 250

E4 The youth-oriented entertainment channel from E4, featuring the best US series and UK comedy. **EPG:** 205

E4 +1 The youth-oriented entertainment channel from E4, featuring the best US series and UK comedy. **EPG:** 205

FIVE General entertainment. Since it is soft-scrambled on satellite you require a Videocrypt decoder to see it. **EPG:** 105 Ⓕ

FLAUNT Pop, dance and R'n'B videos collide with fashion tips and celeb gossip for trendy teenage girls. **EPG:** 472

FOX KIDS NETWORK More cartoons and fun-filled fare to keep those pesky kids quiet. **EPG:** 610-611

FOX NEWS Often controversial 24-hour news channel broadcasting direct from the US arm of the Murdoch empire. **EPG:** 531

FTN The 'full-on entertainment' channel has new shows, plus the best of Bravo, Living, Trouble, & Challenge? **EPG:** 256 Ⓕ

FX Comedy, drama and movies from the US on this Fox-affiliated entertainment channel. **EPG:** 289

HALLMARK Epic mini-series, kids' faves and family films in the most wholesome channel on satellite TV. **EPG:** 190

ITV1 Popular entertainment channel whose flagship is the evergreen ratings giant Coronation Street **EPG:** 235 Ⓕ

ITV2 The best of ITV1's programming (often shown later than on ITV1) plus American imports. **EPG:** 226 Ⓕ

KERRANG! Non-stop music videos programmed directly by the viewers. From the makers of The Box. **EPG:** 457

KISS The one-time pirate radio station now has its own commercial dance music channel with videos galore. **EPG:** 450

LIVING TV Aimed at women, but also picks up a sizeable number of men. Jerry Springer is its crown jewels. **EPG:** 112

MAGIC Middle-of-the-road music videos mainly from the 1970s and 1980s on the channel that's also a radio station. **EPG:** 452

MEN & MOTORS Mix of motoring shows, taking in bikes, cars and extreme. Post-11pm men's shows. **EPG:** 139

MTV IN THE UK A mix of music with soul, rap, rock and dance music augmented with a big dose of Brit-pop. **EPG:** 440

MTV2 Described as the 'flip side of MTV', M2 plays off-the-wall music from bands that haven't made it – yet. **EPG:** 446

MTV BASE MTV Base Hip hop, R'n'B and soul in MTV's funky flip-side. **EPG:** 447

MTV DANCE The best tunes from the big clubs, as the ultimate hotline to what's huge in this dance nation. **EPG:** 448

MTV HITS Mo' music and documentaries from the MTV crowd. **EPG:** 441

MUSIC CHOICE BASIC 10 music channels, and 30 extra premium channels for £5 a month on channel 481. **EPG:** 480

NATIONAL GEOGRAPHIC CHANNEL 'Enlightening programmes' on animals, natural history and life. **EPG:** 558-559

NATIONAL GEOGRAPHIC CHANNEL+1 'Enlightening programmes' on animals, natural history and life. **EPG:** 558-559

NICKELODEON Nickelodeon claims to provide the sort of TV kids want, with plenty of Sister, Sister. **EPG:** 604-605

NICK JR The Mr Men and Bob The Builder in an all-day channel for moms and tots from the Nickelodeon stable. **EPG:** 606

NICK REPLAY Never miss a thing on Nickelodeon with this bonus catch-up channel. **EPG:** 605

NICK TOONS The most popular Nickelodeon cartoons, including Rocko and Rugrats, get a spin-off channel. **EPG:** 606

PARAMOUNT COMEDY CHANNEL A mix of classic and cult comedy from home and the US. **EPG:** 127

PARAMOUNT 2 Another chance to catch the best of Paramount on this Sky One Mix-style extra channel. **EPG:** 128

PLUS Formerly Granada Plus and still featuring a mix of popular shows including Hart To Hart and vintage Cold Feet. **EPG:** 118

Q Let it rock with a non-stop video jukebox from the people who brought you The Box and Q Magazine. **EPG:** 455

SCI-FI Older cult science-fiction and horror series on offer alongside a range of classic and kitsch films and series. **EPG:** 130

SCUZZ Music channel with rock, punk and nu-metal your rebellious sibling would like & some stunts. **EPG:** 471

SKY NEWS Sky's 24-hour rolling news channel. **EPG:** 235 Ⓕ

SKY ONE General entertainment channel that boasts an impressive array of imported soaps and cult dramas. **EPG:** 106

SKY ONE MIX Missed your favourite Sky One show? Catch it again here along with some Sky One Mix exclusives. **EPG:** 107

SKY SPORTS NEWS Keep up with the latest on football transfers, fixtures news and comment on sport. **EPG:** 413 Ⓕ

SKY TRAVEL Suitcases at the ready for the travel channel that's part Holiday but also the home of Baywatch. **EPG:** 145 Ⓕ

SKY TRAVEL EXTRA Find more excuses to leave the country on this sister channel to Sky Travel. **EPG:** 146

SMASH HITS The teen pop bible has its own music video channel packed with Top 40-friendly tunes. **EPG:** 451

TCM Turner Network Television presents a selection of star movies from the golden age of the silver screen. **EPG:** 327

THE AMP Rock, pop & dance videos and profiles aimed at 20s to 30s on this music channel from Sky and XFM. **EPG:** 469

THE BOX Interactive music channel that allows viewers to select music videos. **EPG:** 449

THE HISTORY CHANNEL Docs and programmes that put major historic events into perspective. **EPG:** 561 & 562

THE HISTORY CHANNEL +1 Docs and programmes that put major historic events into perspective. **EPG:** 561 & 562

THE HITS Aptly named music video channel featuring wall-to-wall chart-bound tunes. **EPG:** 458 Ⓕ

TMF The Music Factory to give its full name showing chart-centric videos of the day all day long. **EPG:** 448 Ⓕ

TOONAMI The best in American and Japanimation from the maker of Cartoon Network. **EPG:** 621

TROUBLE A channel aimed at teenagers that's actually quite rejuvenating for the rest of us too. **EPG:** 607

TROUBLE RELOAD Catch up with choice highlights from Trouble, Flextech's channel for teenagers. **EPG:** 608

TV5 EUROPE The best of French TV including, news, entertainment and factual programmes. **EPG:** 825

TVE INTERNATIONAL Serving Spanish-speaking nations across the globe, with news and entertainment. **EPG:** 835

UK BRIGHT IDEAS Home improvement central for fans of DIY SOS, Changing Rooms et al. **EPG:** 253 Ⓕ

UK DRAMA Vintage drama from the UK ranging from much-loved costume classics to modern dramas. **EPG:** 151

UK FOOD A smorgasbord of culinary delights from all over the world including new programming and old faves. **EPG:** 149

UK GOLD Devoted to BBC and Thames TV repeats, UK Gold presents classic series from terrestrial TV. **EPG:** 109 & 110

UK GOLD +1 Devoted to BBC and Thames TV repeats, UK Gold has classic series from terrestrial TV. **EPG:** 109 & 110

UKG2 Irreverent comedies and quiz shows for a younger audience than UK Gold. **EPG:** 111

UK HISTORY Brush up on history with some informative documentaries and other programming. **EPG:** 244 Ⓕ

UK HORIZONS The best documentaries from the Beeb's archives get an airing here. **EPG:** 564 & 565

UK HORIZONS +1 The best documentaries from the Beeb's archives get an airing here. **EPG:** 564 & 565

UK STYLE Go for a makeover with shows on beauty, health and related interests. It's a woman's world here. **EPG:** 148

VH-1/VH-1 CLASSIC A dynamic mix of old and new rock and pop. Plus top tunes from the past on VH-1. **EPG:** 443-444

EXTRA SUBSCRIPTION CHANNELS

18 PLUS MOVIES Adults-only pay-per-view erotic entertainment. **EPG:** 765-769

ALPHA TV PUNJAB News, entertainment, movies and sports in Punjabi for South Asian viewers. **EPG:** 818

AMATEUR BABES Saucy footage of 'inexperienced' girls in action. **EPG:** 988

AL JAZEERA SATELLITE CHANNEL World-famous, occasionally controversial, 24-hour Arabic news service. **EPG:** 819

ART MOVIES Over 3,000 Arabic movies at your fingertips. **EPG:** 820

ART MUSIC Arabic music videos all day long. **EPG:** 821

ARTSWORLD News, listings, performance and docs for all the arts, from sculpture to world music. 199

ARY DIGITAL Pakistani channel offering entertainment, sport, news and religious shows from Pakistan. **EPG:** 812

BANGLA TV Family entertainment and news for Britain's Bangladeshi community. **EPG:** 811

B4U MOVIES A la carte Bollywood film channels for South Asian audiences. (B4U Direct - 823/824) **EPG:** 667

CHELSEA TV Keep up with all the news and match highlights direct from the heart of 'Chelski' FC. **EPG:** 427

EROTIK Pay-per-view adult movie entertainment from this Sky-affiliated channel. **EPG:** 771-776

FILM FOUR UK films from the Channel 4 archives. Also Film Four +1 and Film Four Weekly **EPG:** 323-5

LBC Movies, drama, sports, and entertainment on these Lebanese channel for Arabic speakers. **EPG:** 823

MBC EUROPE Arabic news and entertainment for the 130million Arabic speakers across the globe. **EPG:** 822

MUTV Presents news and views and just about everything to do with Manchester United Football Club. **EPG:** 410

NASN North American Sports Network: coverage of American football, basket ball, ice hockey & baseball. **EPG:** 420

PLAYBOY + THE ADULT CHANNEL Erotica for lovers rather than the slap 'n' tickle fare on other UK porn channels. **EPG:** 974 & 981

PREMIERSHIP PLUS Keep up with all the Premiership football matches on Sky's pay-per-view sports channel. **EPG:** 433

PRIVATE BLUE/PRIVATE GIRLS Adult movie entertainment from the Private stable. **EPG:** 985-986

PTV PRIME UK 24-hour Pakistani family entertainment TV channel for all Urdu/ Punjabi-understanding people. **EPG:** 815

RED HOT FILMS, EURO & AMATEUR Two channels of the sauciest PPV soft porn from the Continent. **EPG:** 989-991

SET ASIA Asia-based news and entertainment channel. **EPG:** 802

SETANTA SPORT 12 hours of Gaelic football broadcast every Sunday covering the GAA championship. **EPG:** 435-436

SOUTHFORYOU South Asian news and entertainment channel. **EPG:** 817

SPICE Straight from the US, the hottest stars in the hottest exclusive movies and Spice compilations. **EPG:** 982

STAR NEWS & STAR PLUS Sky's eastern sister channels live and direct from Asia in English and Hindi. **EPG:** 803-804

TANTALISE TV Hands in pockets for more adult naughtiness. **EPG:** 989

THE ADULT CHANNEL Soft porn films, raunchy 'comedy' series, and wet-T-shirt-type fare. **EPG:** 974 & 981

THE RACING CHANNEL Could be your (nose)bag, broadcasting daily two race meetings. **EPG:** 416

TVX – THE FANTASY CHANNEL A soft-core porn channel presenting adult entertainment fare. **EPG:** 977

XPLICIT Formerly Pout Uncut, Xplicit, as its name suggests, promises more than mere softcore titillation. **EPG:** 984

XXX TV Erotic entertainment promising to deliver slightly more, er, raunchy fare than rivals. **EPG:** 987

ZEE TV, ZEE MUSIC AND ZEE CINEMA The original channel for Asians in the UK. **EPG:** 808-810

sky premium channels

DISNEY CHANNEL, PLUS ONE, TOON DISNEY AND PLAYHOUSE DISNEY **EPG:** 613-614

SKY MOVIES Nine premium film channels with, so the blurb goes, something for all moods. **EPG:** 301-309

SKY SPORTS 1 + 2 Live Premiership soccer & coverage of basketball and tennis, to wrestling and motor sports. **EPG:** 401

bonus channels

SKY CINEMA Featuring oldies and cult foreign fare, these two film channels are free to Sky Movies subscribers. **EPG:** 310-311

SKY SPORTS 3 + EXTRA Classic sports, extra coverage and interactive features on Extra **EPG:** 403-404

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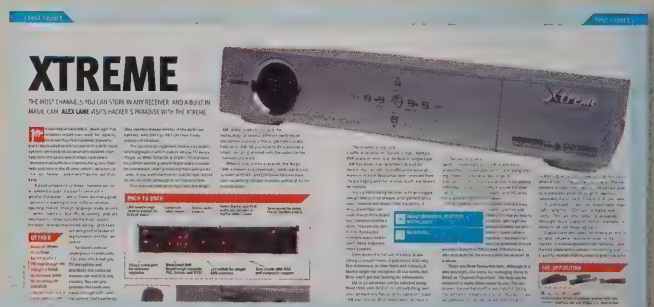

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MARCH/APRIL PREVIEW

YOUR GUIDE TO THE SEASON'S BEST ENTERTAINMENT

Dark journey

Vic Reeves and Bob Mortimer's last acting venture was the much-missed remake of *Randall And Hopkirk (Deceased)*. Now the pair are back with *Catterick*, a dark comedy in which they play long-lost brothers.

Guest stars include Tim Healy (*Auf Weidersehen, Pet*), Mark Benton (*Clocking Off*), Morwenna Banks (*Absolutely*), Matt Lucas (from *Shooting Stars* and *Little Britain*), Reece Shearsmith (*The League Of Gentlemen*) and Julie T Wallace (*The Life And Loves Of A She-Devil*).

Catterick is on BBC Three from February

Buddy-buddy

There's new buddy cop drama on *10-8* on Plus this winter. It's produced by Aaron Spelling – who was also responsible for *Starsky And Hutch, Charlie's Angels* and *Dynasty*.

The show stars Danny Nucci as native New Yorker Rico Amonte. His LAPD detective brother encourages him to move to California and join the force. Two years later Danny is chasing bad guys, paired with older, wiser cop, Deputy John Henry Barnes (Ernie Hudson, *Ghostbusters*).

As you would expect, the younger cop learns from the elder, and a mutual respect develops.

Without a clue

Alicia Silverstone is back with *Miss Match*, a new light-hearted drama where she plays a match-making lawyer. It's like a grown-up *Clueless*, and gives Silverstone a chance to recreate past glories. Ryan O'Neal plays her father.

Showing on Living TV from February

Stars in their eyes

There's an all-new beginning for this remake of the cheesy early 1980s sci-fi series *Battlestar Galactica*. Starbuck is a woman (Katee Sackhoff) and the Cylons look human (especially Number Six, pictured, played by the glamorous Tricia Helfer) but most of the elements that made the original successful are still present. This mini-series aired last year in the US, and has since been reshaped into the pilot for a series, so expect to see more soon.

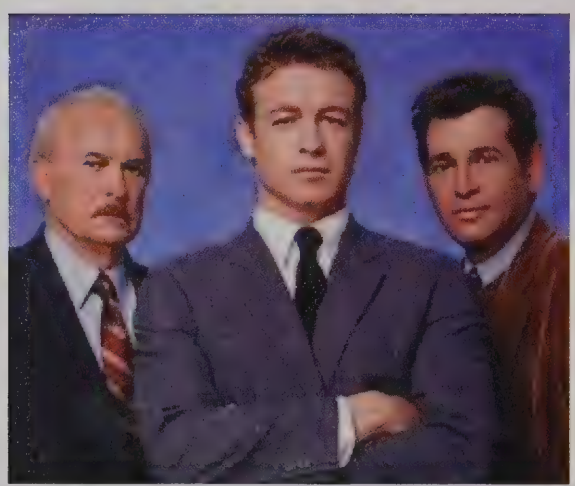
The series also stars Callum Keith Rennie (best known for his role in *Due South*), Edward James Olmos, Mary McDonnell and Jamie Bamber as Apollo.

Battlestar Galactic is on Sky Movies 2 in February

History year

The History Channel is taking a detailed look at the last millennium this year. Historian Michael Wood fronts the strand of classic history series about the last 1,000 years.

The season starts in February, looking at the years 1000-1100, building up to a climax in February, when aspects of the 20th century are explored.



Guardian angel

It's been described as an underdog and a dark horse – in the US *The Guardian* has proved popular even though it was ignored by the media. Simon Baker plays the anti-hero Nick Fallin, a hot-shot lawyer convicted of a minor drugs crime and sentenced to work as a child advocate, *pro bono*.

Series two starts on The Hallmark Channel in February

Will the real Royston Vasey please stand up?

Roy Chubby Brown has been a wildly popular comedian for years, but you'll very rarely see him on television. That's all set to change this year – Men & Motors has bought a pile of his X-rated shows – and it's not afraid to show them.

'Chubby' plays to audiences of 350,000 people a year. Taped shows include *Saturday Night Beaver, You Fat B*stard* and *The Helmet Rides Again*. He's also had the honour of having the fictional town of Royston Vasey (his real name), in *The League Of Gentlemen*, named after him.

Inner space

Comedian Tony Hawks comes to The Disney Channel this winter, with *Inside Clyde*, a new show that's a cross between *The Crystal Maze*, *The Adventure Game*, *How?* and the 1960s Raquel Welch movie *Fantastic Voyage*.

Tony plays a scientist who has developed the technology to shrink people and inject them into his assistant's bloodstream. Each week two adults and two children go inside Clyde to explore parts of his body and collect clues. Along the way they have to complete puzzles and games to progress to the next part of Clyde's body.

A pirate's life for me

Pirates Of The Caribbean makes its Box Office debut this spring. The blockbuster recently won the American People's Choice Award as best film of the year – beating *The Two Towers*. It also gave a second wind to Johnny Depp's career. Up to now he has been moderately successful by Hollywood standards, but best-known for quirky character work in independent features. Now he is Hollywood gold. His role in the top is monitored on a documentary on Biography, on Sky in March.

Pirates Of The Caribbean also stars Orlando Bloom, Keira Knightley, Jack Davenport, Geoffrey Rush (as Captain Barbossa) and Jonathan Pryce. Watch out for Mackenzie Crook (Gareth in *The Office*) as wooden-eyed zombie pirate Ragetti.

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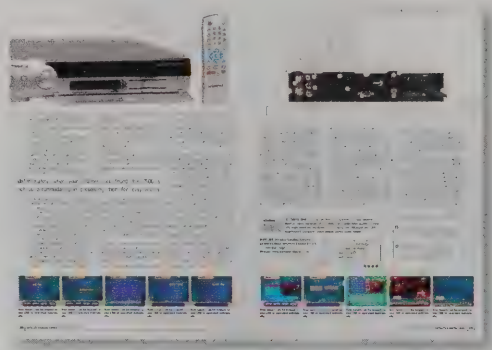

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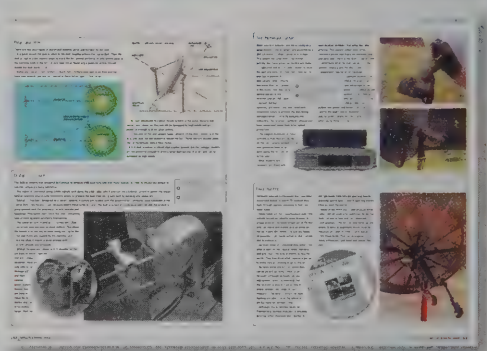

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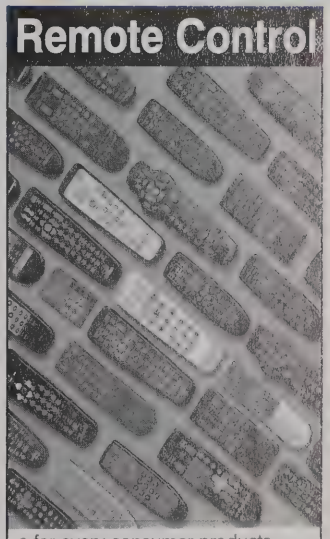

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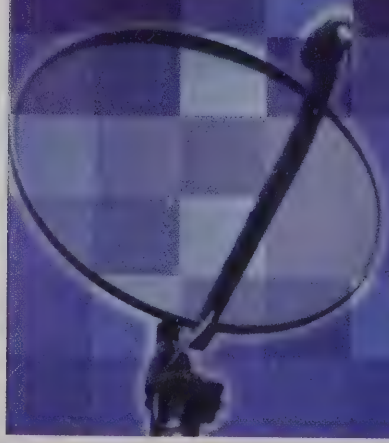

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Wood Work

HISTORIAN MICHAEL WOOD IS THE FACE OF UK HISTORY'S YEAR-LONG SEASON FOCUSING ON THE PAST MILLENNIUM. ELISE HARRIS TALKED TO HIM

Michael Wood is best known for his series of documentaries *In The Footsteps Of...* historical figures – including Alexander the Great and the Conquistadors. Many people probably don't realise that he's also keen on English history – especially the era leading up to William the Conqueror's invasion of Britain.

UK History is showing two of his early documentaries, on Aethelred the Unready and William the Conqueror himself.

Michael says: 'Obviously, my *Footsteps* films are not to do with British history – they're foreign films, so what I'm doing is linking this year of programmes together – with commentary on the significance of the different eras, from the Normans on.'

He agrees that there are many aspects of British history that are largely unknown to the general public.

'There's a lot of stuff in British history that remains to be done – you've got a series like the Schama series, which in 16 episodes you can only tell some of the greatest stories – there are whole lives of great Britons who have never had programmes made about them,' he says.

'The interaction with the empire has made us all what we are – and I hope people of every background will watch these programmes.'

He is excited about the early medieval period of British history, and is also looking forward to the programmes about the Tudors.

'My kids have just been doing the Tudors at school – like the ancient Egyptians, the Tudors just grab everybody don't they? And especially Elizabeth.'

He believes Elizabeth was an amazing historical figure.

'Elizabeth came to the throne after this horrendous childhood – damaged, wounded but a brilliant person – possibly one of the most brilliant monarchs who has ever ruled these islands. She gambled that she would live long enough to get over the terrible mess that had been left by her father and her half-brother and sister. And she succeeded – it's an amazing story.'

He is also particularly fascinated by the British Empire and Victoriana. He believes that 'for good or ill', the empire is the great event in the past 400 years

'The interaction with the Empire has made us all what we are – whoever you are – and I hope people of every background will watch these programmes.'

He says the shows on UK History are about 'every Briton'. No matter what their ethnic or cultural origin. – and says it's almost inconceivable that we would be a successful nation today without the influx of people throughout the Empire.

'If anything, it has enriched our lives totally,' he adds.

'All the greatest English literature in the English language over the last few years has been written by people in India and Africa and the Caribbean,' he says. 'So in every way it's been a revolution, and it still is – we're still in the middle of it.

'We all share this history and we especially share the history of the Empire. It's made us and, I think, there are some very powerful programmes there.' ■

Michael Wood presents UK History's 1000 Years Of History throughout 2004

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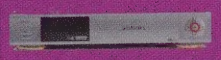

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